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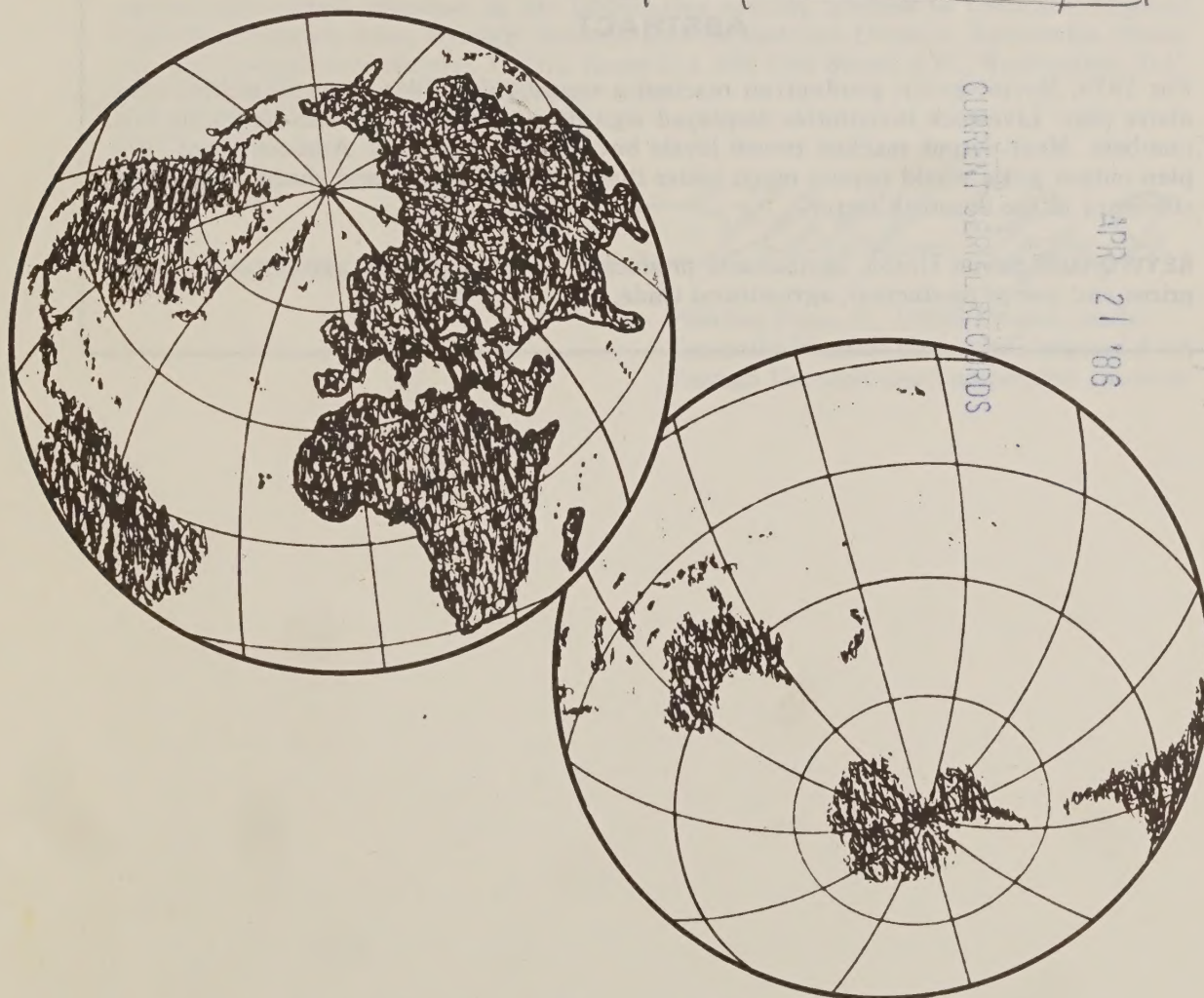
Supplement 1 to WAS-18

reserve Agricultural Situation

Review of 1978 and Outlook for 1979

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USSR



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ABSTRACT

For 1978, Soviet grain production reached a record 235 million tons, 15 million tons above plan. Livestock inventories displayed significant increases in 1978 especially hog numbers. Meat output reached record levels but was short of plan. Attainment of 1979 plan output goals would require much better than normal weather and sharply increased efficiency in the livestock sector.

KEYWORDS: Soviet Union, agricultural production, crops, livestock, agricultural inputs, prices and cost of production, agricultural trade.

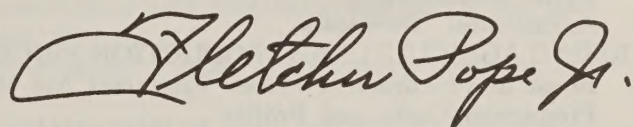
FOREWORD

This report reviews and analyzes major developments in the Soviet food and fiber system during 1978 and provides information on the outlook for 1979. Agricultural developments of major concern to the United States are emphasized, especially developments affecting the outlook for foreign trade of farm commodities.

This report updates and supplements statistics and other information found in *USSR Agricultural Situation: Review of 1977 and Outlook for 1978*, Supplement 1 to World Agricultural Situation Report No. 15. Other regional reports are published on Western Europe, Eastern Europe, the Western Hemisphere, Africa and West Asia, Asia and Oceania, and the People's Republic of China.

Michael D. Zahn directed and coordinated preparation of this report. Sections of the report were written by Angel O. Byrne, Fletcher Pope, Jr., and Michael D. Zahn. Carolyn Miller assisted in the compilation of statistical data.

We welcome any comments, suggestions, or questions concerning this report or the current agricultural situation in the USSR. Our mailing address is: Centrally Planned Countries Program Area, Foreign Demand and Competition Division, Economics, Statistics, and Cooperatives Service, USDA, Room 314, 500 12th Street, S.W., Washington, D.C. 20250. Our telephone number is (202) 447-8380

A handwritten signature in dark ink, reading "Fletcher Pope, Jr." in a cursive script. The signature is positioned above the printed name and title.

Fletcher Pope, Jr., USSR Project Leader
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CONVERSION EQUIVALENTS

Pounds per bushel

Wheat, potatoes, and soybeans.....	60
Rye, corn, and grain sorghum.....	56
Barley.....	48
Oats.....	32

One kilogram	equals	2.2046 pounds
One centner or metric quintal	"	220.46 pounds
One metric ton	"	10 centners or 2204.6 pounds
One hectare	"	2.471 acres
One acre	"	0.4 hectare
One kilometer	"	0.6 mile

Metric tons to bushels

<u>One metric ton</u>	<u>Bushels</u>
Wheat, potatoes, and soybeans.....	36.743
Rye, corn, and grain sorghum.....	39.368
Barley.....	45.929
Oats.....	68.894

Bushels to metric tons

<u>One bushel</u>	<u>Metric tons</u>
Wheat, potatoes, and soybeans.....	.02722
Rye, corn, and grain sorghum.....	.02540
Barley.....	.02177
Oats.....	.01452

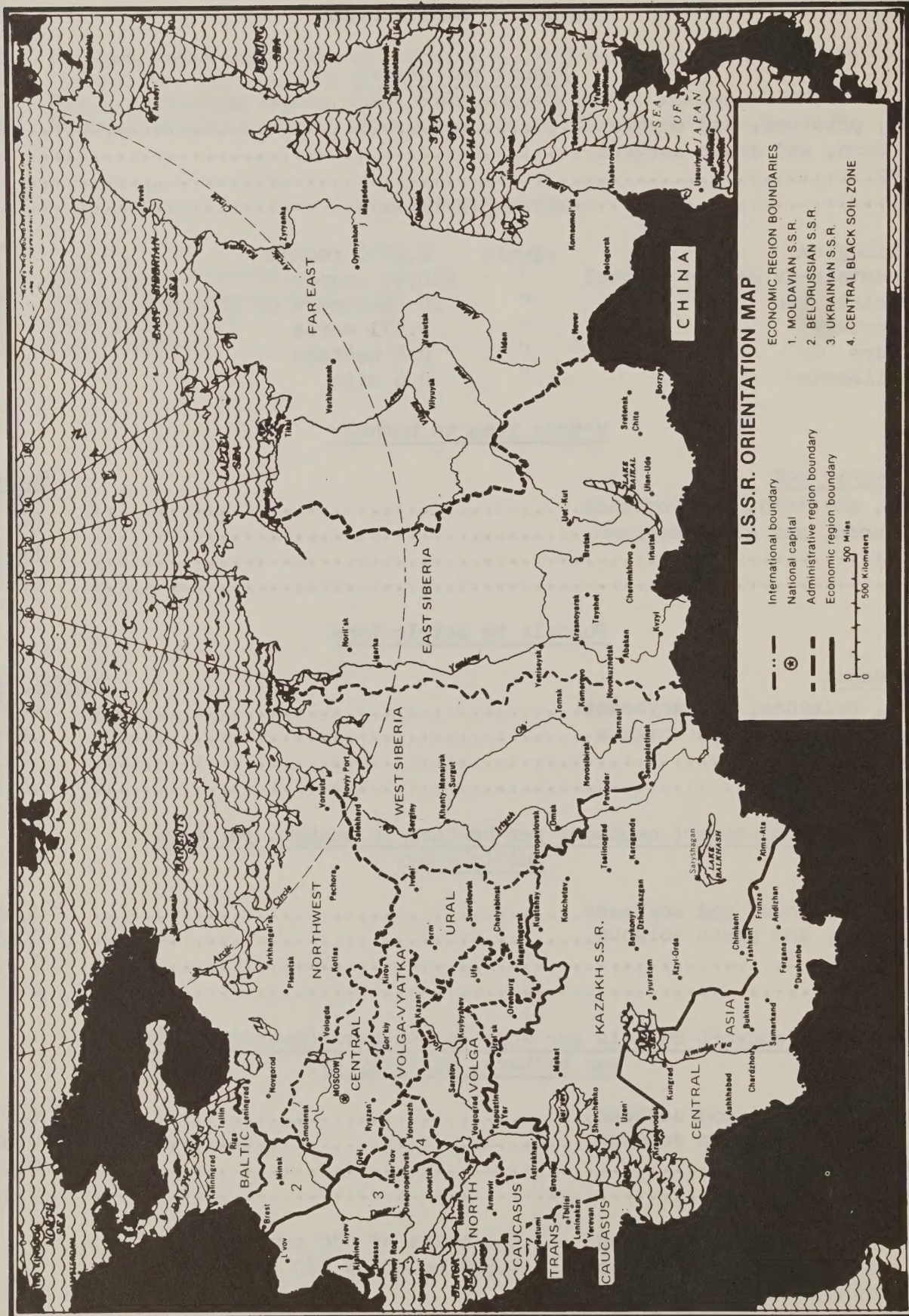
To convert centners per hectare to bushels per acre,
multiply by:

Wheat, potatoes, and soybeans.....	1.487
Rye, corn, and grain sorghum.....	1.593
Barley.....	1.8587
Oats.....	2.788

To convert bushels per acre to centners (metric quintals)
per hectare, multiply by:

Wheat, potatoes, and soybeans.....	0.6725
Rye, corn, and grain sorghum.....	0.6277
Barley.....	0.5380
Oats.....	0.3587

One metric ton of seed cotton = 1.562 bales of 480 pounds.
One metric ton of ginned cotton = 4.593 bales of 480 pounds.
One pood = 16.3805 kilograms.
One metric ton of eggs = 18,182 eggs.



USSR AGRICULTURAL SITUATION

Review of 1978 and Outlook for 1979

SUMMARY

The year 1978 was good for agriculture in the USSR. Although the annual plan fulfillment report¹ indicated some problems with certain agricultural outputs and inputs, overall results were good. Gross agricultural output was up 4 percent over 1977 levels and reached a record 130 billion rubles; nonetheless, this was 2 billion rubles below plan.²

The Soviet Union produced a record 235 million tons of grain³ in 1978, 11.2 million tons or 5 percent more than the 1976 record. The plan fulfillment report indicated that wheat production totaled 120.8 million tons, rye—13.6 million tons, corn—9.0 million tons, and paddy rice—2.1 million tons. The average 1978 grain yield was reported at 1.83 tons per hectare, and the final grain area was 128.5 million hectares, down nearly 2 million hectares from 1977. Weather conditions during the growing season were very good, with practically all regions maintaining above average soil moisture supplies; Altay kray recorded the only significant below-average soil moisture conditions.

The overall dockage-waste from the Soviet crop is estimated at about 11-12 percent, or 27 million tons, compared with a 10-percent average. But of equal importance, the quality of the grain crop probably ranks with the 1973 crop as about the lowest of any harvested during 1971-77, with the low-quality grain confined to the European USSR.

Last year's grain crop surpasses estimated utilization in 1978/79 by about 5 million tons. Feed use, estimated at 125 million tons, accounts for about 55 percent of 1978/79 utilization. By comparison, food, industrial uses, and seed account for only 33 percent.

Total livestock feed availabilities from all sources in 1978/79 are estimated to be up 4-5 percent over 1977/78. Grain consumption per animal unit has recovered dramatically following the disastrous grain crop of 1975, and in 1978/79 has reached a record 846 kilograms per unit or 29 percent more than in 1975/76.

Livestock inventories and production showed strong gains in 1978. Total cattle numbers on January 1, 1979, were up 2 percent over a year earlier and stood at a record 114.4 million head. Hog numbers were up 6 percent reaching a record 74.7 million head. Poultry numbers on January 1 were estimated at 940 million head, up 7 percent. The total number of grain consuming animal units in the USSR on January 1 reached a record of nearly 148 million units, 3 percent over January 1, 1978.

Meat output in 1978 was up 3 percent, 400,000 tons below plan, but still a record 15.2 million tons. Milk production, which totaled 94.5 million tons, was short of plan and below the 1977 record. Egg production, on the other hand, was above plan and reached a record 64.4 billion eggs. Wool production also was a near record.

Crop production, outside of grain, did not compare favorably with the livestock sector. Cotton production in 1978 totaled 8.5 million tons, down from 8.76 million in 1977, because of very poor spring sowing conditions and early frosts in October. Sugarbeet output rose marginally above 1977 levels to 93.8 million tons and the sugar content apparently was somewhat higher. Industrial sugar production in calendar 1978 climbed 1.4 percent over 1977 to a record 12.2 million tons, of which 8.6 million was from beets and 3.6 million from imported Cuban raw. Production of potatoes, still a major staple in the Soviet diet, increased slightly to 85.9 million tons.

The very late harvest and cold wet growing season took their toll on Soviet sunflowers; production totaled only 5.31 million tons, 10 percent below 1977 output. The reduced sunflowerseed crop, coupled with a smaller cotton crop, spurred the Soviets to enter the international oilseed and products market at the end of December and in January

¹*Izvestiya*, January 20, 1979.

²In March 1979 one ruble equaled 1.51 U.S. dollars at the official Soviet rate. However, when traded on West European exchanges, the ruble is discounted considerably.

³The Soviet definition of grain includes wheat, coarse grains, pulses, paddy rice, buckwheat, and miscellaneous grains. All units of measure used in this report are metric unless otherwise indicated.

before final oilseed production figures were made public in order to secure some commitments on fats, oils, and oilseed shipments.

Agricultural investments rose 4.5 percent in 1978, to 34.4 billion rubles. A total of 760,000 hectares of newly irrigated land was brought into production and an additional 680,000 hectares were drained for agricultural use. Most plans for agricultural machinery deliveries were met, but fertilizer deliveries were lower than anticipated and will significantly affect future growth in agricultural production. Deliveries of fertilizer increased by 2 million tons over 1977, but were 1.2 million tons below plan. Total deliveries reached a record of 79 million tons, yet this is far short of the 115-million-ton plan for 1980.

On July 3-4, 1978, the Central Committee of the Communist Party conducted a Plenum on the "Long Range Development of Agriculture in the USSR". Several plan goals were laid out for 1985 and beyond, and general discussions centered on current problems facing agriculture and proposed solutions. Average annual grain production in the 11th Five-Year Plan (1981-85) is to reach 238-243 million tons, and by 1990 grain output should

reach 1 ton per capita. Meat production (carcass weight) by 1985 is planned at 19.5 million tons.

Livestock production was strongly emphasized at the Plenum, as well as the role of the private sector as an important component in meeting the goals of the current and future Five-Year Plans.

The cost of agricultural production has been rising rapidly in recent years, severely squeezing profit margins on some agricultural commodities. This has led to large increases in Government procurement prices for selected agricultural products which became effective January 1, 1979. On average, milk prices are up 15.3 percent, wool up 18 percent, potatoes up 32.1 percent, and vegetables up 13 percent. These price increases will cost the Government an additional 3.2 billion rubles in subsidies since there will be no commensurate retail price increase. According to Soviet figures, these price increases will bring the total subsidy to agriculture to about 25 billion rubles annually.

U.S. agricultural exports to the USSR rose to \$1.7 billion in calendar 1978, compared to the reduced level of \$1 billion in 1977. U.S. wheat exports were unchanged but corn exports tripled to 10 million tons. (*Michael D. Zahn*)

SOVIET 1978 GRAIN HARVEST EQUALED 1980 GOAL

The 235 million tons of grain produced in 1978 exceeded the planned harvest by 15 million tons or 7 percent, and equaled the target set for 1980, the end of the 10th Five-Year Plan (1976-80).⁴ At 128.5 million hectares the grain area was slightly larger than the 1973-77 average but was about 2 million hectares smaller than in 1977. Thus, the record 1978 grain crop was due to a record yield of 1.83 tons per hectare, 20 percent higher than the 1973-77 average, and 4-5 percent above the previous high yields of 1973 and 1976.

Favorable weather was primarily responsible for the 1978 grain crop exceeding by 5 percent the 1976 record of 223.8 million tons. In fact, better-than-normal weather contributed an estimated 25 million tons, or 12 percent, to last year's grain crop. The pre-season projection of trend yields—those that seemed most likely under more or less

average weather—was 10 percent less than those actually achieved. The crop was grown under weather conditions that are quite unusual for the Soviet Union in that soil moisture supplies ranged from adequate to abundant almost everywhere. The only exceptions were a relatively small area in north central Kazakhstan and the Altay kray in Siberia.

State grain procurements (according to a statement on January 19, 1979, by Lev Volodarsky, Chief of the Central Statistical Administration) totaled a record 96 million tons, exceeding by 4 percent the previous record of 92.1 million in 1976.

The major grain-growing republics all contributed to the record grain production and procurements in 1978. The Russian Republic (R.S.F.S.R.) both produced a record crop and sold a record amount to the State. The Ukraine also produced a record crop, but grain sales to the State were 4 percent less than the record 18.5 million tons sold in 1977. In Kazakhstan, both grain production and sales to the State fell somewhat short of 1976 levels. The following tabulation shows grain production and procurements in 1978 and in previous record years:

⁴Soviet grain production data as well as grain yield data used in this report are in terms of "bunker-weight"—that is, grain as it comes from the combines and thus contains varying amounts of moisture and foreign matter.

Republic	Grain production		Grain procurements	
	1978	Previous record ¹	1978	Previous record ¹
<i>Million metric tons</i>				
R.S.F.S.R.	136.3	129.0 (1973)	56.2	52.6 (1976)
Ukraine.	50.6	48.5 (1977)	17.8	18.5 (1977)
Kazakhstan	27.9	29.8 (1976)	16.7	19.6 (1976)
Others ²	20.2	22.3 (1976)	5.3	5.0 (1976)
USSR	235.0	223.8 (1976)	96.0	92.1 (1976)

¹ Year in parenthesis.

² Calculated data for 12 remaining republics as a group.

In 1978, the Soviets harvested a record winter grain crop of 82.5 million tons, 30 percent higher than the 1973 record of 63.5 million tons. The winter grain area was the largest since 1968, the result of a less than normal winterkill and a record winter wheat area. Winter grain yields, again thanks mainly to winter wheat, exceeded by almost a tenth the 1973 record of 2.36 tons per hectare. However, the quality of the winter grains harvested was probably rather poor and the amount of excess moisture and foreign matter in them was probably high since these grains are concentrated in European USSR where harvesting conditions were very bad.

The 120.8-million-ton wheat harvest in 1978 was 10 percent larger than the 1973 record—winter wheat was a third larger than in 1973 while spring wheat was almost a tenth smaller. On the other

hand, coarse grain production, at 104 million tons, fell 10 percent short of the record 115 million tons harvested in 1976. That year's record was mainly due to a 70-million-ton barley crop. Nevertheless, the 1978 barley crop was the second largest on record.

Soviet grain utilization during 1978/79 is estimated at 230 million tons (table 1). The three relatively stable grain uses—seed, industrial, and food—account for 78 million tons, or a third of estimated total grain utilization. Feed use, at an estimated 125 million tons, or over half the total, is by far the most dynamic use category. Wheat accounts for an estimated 44 million tons, or a third of the grain used for feed, with coarse grains accounting for most of the remainder (table 2). Dockage-waste is estimated at 27 million tons, or 11-12 percent, of 1978 grain production. Good harvesting weather from the Volga River eastward held last year's dockage-waste relatively close to the average of 10 percent.

The huge 1978 grain crop caused difficulties in handling, transportation, and storage. These difficulties probably resulted in some abnormal postharvest losses but more importantly in a deterioration in quality of much of the grain which could not be properly stored immediately after harvesting.

Poor progress in the construction of grain elevators in relation to the plan undoubtedly contributed to the grain storage problems. New elevator capacity totaling 4.3 million tons was put into use in 1978, about the amount planned for that year. However, during 1976-78, a total of only 13.1 million tons of grain elevator capacity was put into use, considerably less than half of the 30 million tons planned for the 5-year period 1976-80.

Soviet net grain imports during 1978/79 are forecast somewhat above 10 million tons, even though 1978 grain production stands more than 5 million tons over estimated use during 1978/79. Such imports would permit a buildup of carry-over stocks of roughly 15 million tons. This would put the Soviets in a relatively good position to with-

USSR Grain Production

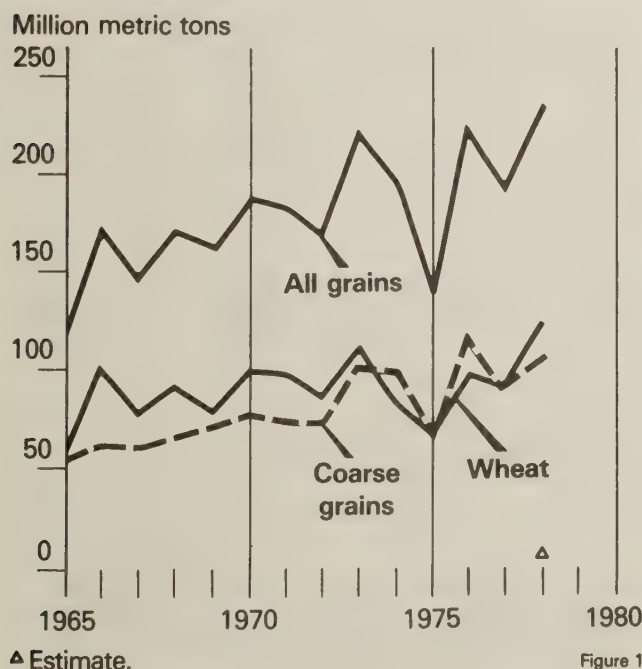


Figure 1.

Table 2--Supply and estimated utilization of wheat and coarse grains, USSR, 1971/72-1978/79 1/

Year beginning July 1	Produc- tion	Trade		Net 2/ Imports : Exports :	Availa- bility	Seed	Indus- trial		Utilization			Total	Stock change 2/ 3/	
		Imports :	Exports :				Food	:Dockage- : waste :	Feed					
Million metric tons														
Wheat														
1971/72	98.8	3.5	5.8	-2.3	97	15	1		35	7		94	+3	
1972/73	86.0	15.6	1.3	+14.3	100	14	1		35	8		98	+2	
1973/74	109.8	4.5	5.0	-.5	109	14	1		34	16		96	+13	
1974/75	83.9	2.5	4.0	-1.5	82	14	1		34	10		93	-11	
1975/76	66.2	10.1	.5	+9.6	76	15	1		35	7		87	-11	
1976/77	96.9	4.6	1.0	+3.6	101	15	1		35	14		93	+8	
1977/78	92.2	6.9	1.0	+5.9	98	15	1		35	14		107	-9	
1978/79 4/	120.8	5.3	1.5	+3.8	125	14	1		35	14		108	+17	
1979/80														
1980/81														
Coarse grains 5/														
1971/72	72.6	4.3	.9	+3.4	76	10	2		7	5		76	0	
1972/73	72.5	6.9	.4	+6.5	79	11	2		7	7		79	0	
1973/74	101.0	6.4	.9	+5.5	107	11	2		7	15		105	+1	
1974/75	99.7	2.7	1.0	+1.7	101	11	2		7	12		100	+1	
1975/76	65.8	15.6	0	+15.6	81	12	2		7	7		84	-3	
1976/77	115.0	5.7	2.0	+3.7	119	12	3		7	16		116	+3	
1977/78	92.6	11.7	1.0	+10.7	103	11	3		7	14		108	-5	
1978/79 4/	103.8	8.5	1.0	+7.5	111	12	3		7	12		111	0	
1979/80														
1980/81														

1/ Rounded to the nearest million tons, except for production and trade data. Thus, totals may not add due to rounding.

2/ Minus indicates net exports or draw-down of stocks.

3/ Difference between availability and estimated total utilization.

4/ Preliminary.

5/ Includes rye, barley, oats, corn, and millet.

stand a moderate future grain crop shortfall without being forced to enter the world grain market on a large scale.

The relatively large world grain supply favors the forecasted moderate grain imports by the

Soviets. Also, the Soviet's poor 9-million-ton corn crop in 1978 would make it advantageous to purchase more U.S. corn than the minimum of 3 million tons called for under the U.S.-U.S.S.R. Grain Purchase Agreement. (*Fletcher Pope, Jr.*)

LIVESTOCK FEED SUPPLIES IMPROVE

Livestock feed supplies for 1978/79, expressed in terms of oat equivalents,⁵ are estimated 4-5 percent higher than a year earlier, with per animal unit supplies up 1-2 percent. Feed supplies per animal unit in 1978/79 are estimated to be the third largest on record trailing only 1973/74 and 1976/77.

The increase of feed supplies is due to the record 1978 grain crop and an excellent forage crop harvest. Grain for feed is estimated at 125 million tons, up from 120 million tons in 1977/78. Grain consumption per animal unit in 1978/79 is estimated at a record 846 kilograms, up 1.4 percent from 1977/78.

Forage harvesting in 1978 proceeded very well, especially in areas east of the Volga where production was excellent. Hay output on collective

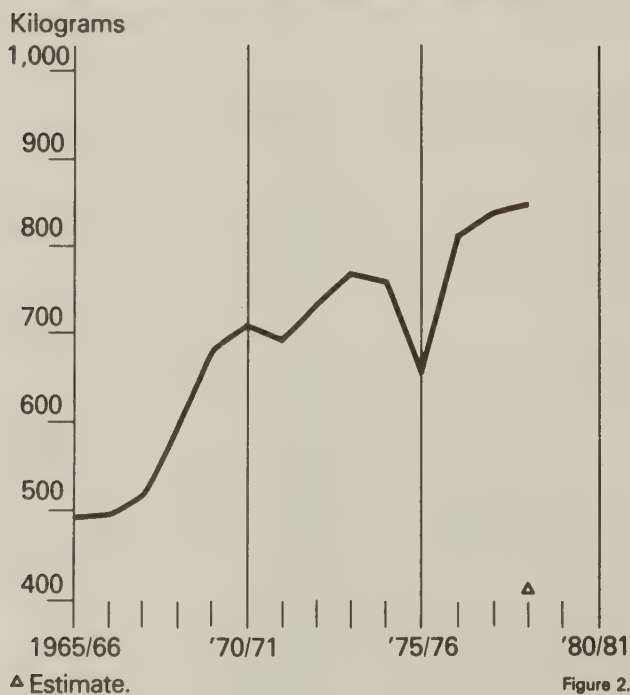
and state farms as of October 23, 1978, had reached 53.8 million tons, indicating that the final crop was just short of the 57.9-million-ton harvest in 1971 and the highest level since 1971. Good production conditions in Siberia and Kazakhstan, where some regions reported output at 2-3 times the relatively low levels of 1977, contributed largely to the excellent hay harvest. Haylage production easily set a record by reaching over 71 million tons by the end of October. Silage harvesting got off to a slow start in August due to a late season and to heavy rains in most areas. But by the end of October, harvesting progress indicated that total output in 1978 probably surpassed the 1977 level. The harvest of straw and stover probably also surpassed levels of the previous few years as a result of the record grain crop.

Expressed in terms of oat equivalents, production of major concentrate feeds (oilseed meal, fishmeal, meat and bonemeal, grass and clover meal, and feed yeasts), excluding grain, increased 8 percent in 1977. Grass and clover meal production increased most rapidly and has become the major nongrain concentrate. Grass and clover meal production in 1977 in terms of oat equivalents, equaled 4 million tons of corn, or more than one-third of the 1977 Soviet corn crop. Production of these major nongrain concentrates in 1978 is expected to be up less than 5 percent owing to a negligible increase in oilseed meal production.

The Soviets annually report, through the Central Statistical Administration (CSA), the total concentrates fed to livestock in the previous calendar year. The official CSA definition of these concentrates includes concentrates of plant origin only. According to CSA figures, concentrates fed to livestock have increased dramatically in recent years. In 1977, total concentrates fed reached a record 143.0 million tons—an increase of 22 percent over the 117.4 million tons fed in 1976 and 39 percent more than in 1970. Concentrates fed in 1978 and 1979 are expected to rise moderately over 1977 levels due to the ample supplies of grain for feed and the record animal numbers on farms.

One disappointing area of the livestock supply situation was the deliveries of chemical feed additives—urea and feed phosphates. Feed additive

Grain Consumption Per Animal Unit



⁵The Soviets use oat equivalents (the feed value of a ton of oats) in aggregating the feed units available from different types of feed; for example, a ton of wheat equals 1.2 tons of oats.

deliveries in 1978 totaled only 2.2 million tons, down from 2.5 million tons in 1977 and far short of the 5-million-ton goal for 1980.

The burgeoning mixed feed industry in the USSR is acquiring considerable attention, especially in light of the Soviet's ambitious livestock production goals. In 1978, total industrial mixed feed production reached 56 million tons—8 percent more than the 51.3 million tons produced in 1977. Mixed feed plants of the Ministry of Procurement accounted for 46.2 million tons of the total. Individual on-farm production totaled an estimated 3 million tons, bringing total mixed feed availabilities to approximately 59 million tons.

Since the mid-1960's, production of mixed feed has undergone major changes and development has been geared toward the poultry industry. Based upon data from the industrial sector, which accounts for more than 80 percent of total output, mixed feed for poultry represented 35 percent of total output in 1977, compared with 18 percent in 1965. Currently, mixed feed comprises 80-89 percent of the entire feed intake for poultry in Ptitseprom SSSR.⁶

The mixed feed industry is striving to broaden the assortment of available feed. Pelletization

continues to make up only a small proportion of total mixed feed output, but the 1980 plan calls for an increase in pelletization to a level representing 27.4 percent of total output.⁷ Molasses in feed has shown a notable increase in recent years and the use of fat has decreased sharply. By 1980, industrial mixed feed processors plan to use 350,000 tons of molasses, compared with 2,318 tons in 1965 and 48,451 tons in 1975.

Mixed feed is expected to continue to play an important role in enhancing feed conversion efficiency. The Soviets claim that the use of mixed feed alone can increase milk yields by 20 percent and increase weight gain in hogs by 15-20 percent. Nonetheless, quality control problems in both mixed feed production and handling still require close attention and sharply reduce the actual feed efficiency compared with theoretical conversion efficiencies.

Lately, mixed feed prices appear to be causing some concern. Increases in wholesale mixed feed prices have increased livestock production costs. At least one Soviet author has questioned whether the higher prices paid for mixed feed relative to unprocessed grain are warranted on an oat equivalent basis.⁸ (Michael D. Zahn)

LIVESTOCK PRODUCTION REGISTERS GAINS

Livestock Inventories

Livestock inventories on January 1, 1979, continued to move upward for most categories of livestock (table 3). Cattle, cow, hog, and poultry numbers reached record highs. Sheep and goat numbers also gained but were below record January 1, 1975, inventories.

Hog and poultry numbers made the largest gains in 1978. Hog inventories on January 1, 1979, at 74.7 million head, were up 6 percent from a year earlier and above plan. Total hog inventories rose by 4.2 million head during 1978, with a 1.3 million head increase in the private sector. On January 1, 1979, the private sector held 16.1 million head, up 9 percent from the greatly increased level a year earlier.

Total poultry inventories on January 1, 1979, have not been reported but there is little doubt that they exceeded the record 881 million head of a year

earlier. However, poultry numbers in the socialized sector on January 1, 1979, were a record 550 million, up 52 million from a year earlier. Thus, total poultry inventories on January 1 are estimated at about 940 million head.

Cattle inventories on January 1, 1979—a record 114.4 million head—were 1.7 million head above a year earlier and also 1.5 million head above plan. Cow inventories, up by 500,000 head, reached a record 43.1 million but were 200,000 short of plan. Sheep and goat inventories, at 148.8 million head, were up 2.3 million but were more than 2 million head smaller than both the record inventories on January 1, 1975, and the planned level.

Meat

Meat production in 1978, totaling 15.2 million tons (includes fat and offals), reached a record high. Output was up 3 percent from a year earlier,

⁶L. Polishchuk, "Retseptura i assortiment kombikormov", *Mukomolno-elavatornaya i kombikormovaya promyshlennost*, no. 11, 1978. Ptitseprom SSSR is the industrialized and modernized poultry production sector of the USSR Ministry of Agriculture.

⁷A. Blidman, "Tematicheskaya vystavka v otraslevom pavilone", *Mukomolno-elavatornaya i kombikormovaya promyshlennost*, no. 11, 1978.

⁸Ya. K. Belousko, "O poryadke ustanovleniya optovyka tsen na kombikorma", *Zhivotnovodstvo*, no. 12, 1978.

Farm Animal Units

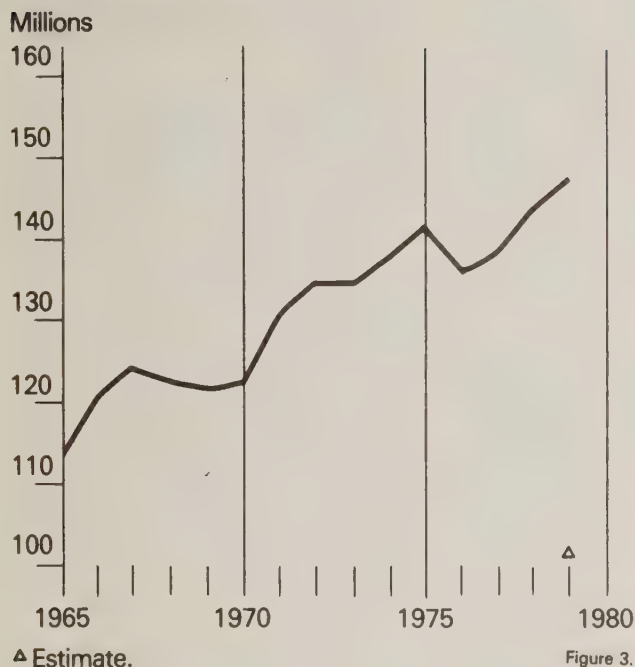


Figure 3.

Meat Production

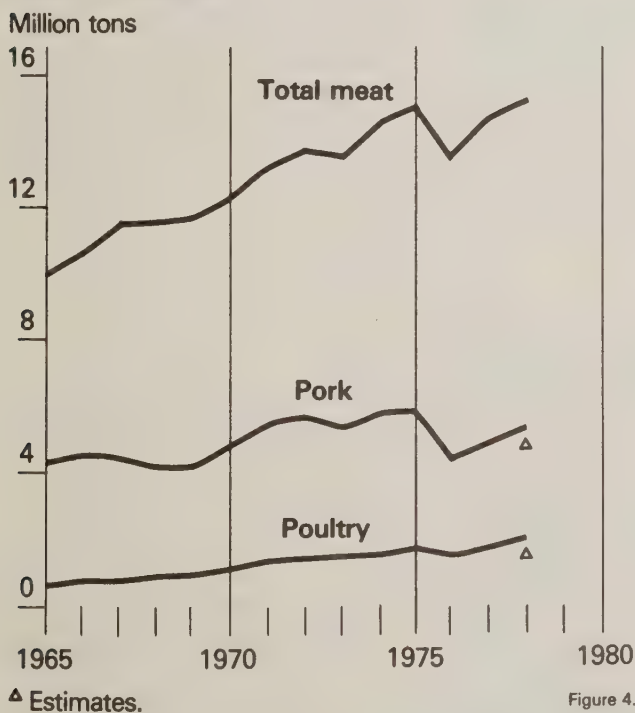


Figure 4.

1 percent above the previous record in 1975, but 400,000 tons less than planned. The largest increases probably occurred in pork and poultry meat. Government purchases of meat (live weight) totaled 17 million tons, 4 percent larger than in 1977, but almost a million tons below the planned level.

In 1977, the USSR imported a record 617,000 tons of meat and meat products, almost double the greatly reduced level of 1976 (table 31). Exports of meat and meat products, at 33,000 tons, were nearly 20 percent below a year earlier and were the smallest export volume since 1971.

Fresh, frozen red meat imports rose sharply in 1977 to a record 559,000 tons, almost double the greatly reduced 1976 level. New Zealand, Australia, Romania, and Argentina were the major suppliers. Imports of fresh, frozen poultry meat also increased sharply, reaching a record 121,000 tons, or more than double the year-earlier figure. Bulgaria and the Netherlands were the only reported suppliers in the 1977 Soviet trade handbook, although the United States supplied a little over 6,000 tons. Canned meat imports in 1977 rose 23 percent but imports of canned meat with vegetables dropped 39 percent. Romania, Yugoslavia, and Somalia were the major suppliers of canned meat, while Bulgaria again was the exclusive supplier of canned meat with vegetables.

USSR exports of fresh, frozen meat in 1977 remained at the same low 8,000-ton level as a year earlier. Canned meat exports fell by 16 percent.

Switzerland, Sweden, and Norway were the only countries reported as buyers of fresh, frozen meat, while Cuba took the bulk of USSR canned meat exports.

Because of the record meat output in 1978, per capita consumption of meat in the USSR undoubtedly rose somewhat above the 57-kilogram level of 1977 (table 30). However, the estimated 1 or 2 kilogram gain would still maintain a per capita consumption level far below the Soviet scientific norm of 82 kilograms.

Milk and Dairy Products

USSR milk production in 1978, which totaled a near-record 94.5 million tons, was 400,000 tons less than the record 1977 output and about 900,000 tons below plan. Although cow numbers reached a record in 1978, average milk yields were down about 2 percent. Government purchases of milk, at a near-record 60.4 million tons, were close to 400,000 tons less than a year earlier.

Factory output of butter in 1978 totaled 1.4 million tons, down 2 percent from a year earlier. Industrial output of whole milk products, at 24.7 million tons, was up 2 percent. Dry whole milk and cream output reached 360,000 tons, up 2 percent from a year earlier. In 1977, the USSR imported 76,000 tons of butter, up sharply from the low 9,600 tons imported in 1976. Dry milk and cream imports rose 54 percent to a record 40,000 tons.

Per capita consumption of milk and milk products (including milk equivalent of butter) in 1978 probably remained at about the same 322 kilo-

Table 4--Production of principal livestock products, USSR, 5-year averages, 1966-75, and annual, 1966-78

Year	Meat						Milk	Wool 2/	Eggs
	Total	Beef and veal	Pork 1/	Mutton, lamb, and goat	Poultry	Other			
<u>1,000 metric tons</u>									
1966	10,704	4,377	4,465	933	745	184	75,992	371	31,672
1967	11,515	5,081	4,456	1,028	764	186	79,920	394	33,921
1968	11,648	5,513	4,079	1,029	817	210	82,295	415	35,679
1969	11,770	5,569	4,094	969	866	272	81,540	390	37,190
1970	12,278	5,393	4,543	1,002	1,071	269	83,016	419	40,740
Average:	11,583	5,187	4,327	992	853	224	80,553	398	35,840
1971	13,272	5,536	5,277	996	1,183	280	83,183	429	45,100
1972	13,633	5,722	5,445	923	1,237	306	83,181	420	47,910
1973	13,527	5,873	5,081	954	1,295	324	88,300	433	51,154
1974	14,620	6,384	5,515	974	1,420	327	91,760	462	55,509
1975	14,968	6,409	5,651	1,014	1,539	355	90,804	467	57,463
Average:	14,008	5,984	5,394	972	1,335	323	87,446	442	51,427
1976	13,583	6,615	4,343	885	1,411	329	89,675	436	56,187
1977	14,692	6,892	4,961	898	1,644	297	94,900	459	61,200
1978	3/ 15,200	4/ 6,900	4/ 5,300	4/ 900	4/ 1,800	4/ 300	3/ 94,500	3/ 462	3/ 64,400
1979									
1980									
Average:									

1/ Including fat.
2/ Greasy basis.
3/ Preliminary.
4/ Estimate.

gram level as a year earlier—far below the Soviet scientific norm of 405 kilograms.

Eggs

Egg production reached a record 64.4 billion eggs in 1978, up 5 percent from a year earlier and 3 percent above plan. Government purchases of eggs, at 39.3 billion eggs, were 7 percent above the year before.

In 1977, USSR egg imports totaled 691 million (in the shell), an increase of 6 percent above the reduced 1976 level. Major suppliers were Hungary, Finland, Poland, and Bulgaria. The record output of eggs in 1978 should have helped raise egg consumption above the 224 per person level in 1977. This would mean that the level planned for 1980, i.e. 225 per person, was probably exceeded in 1978. This, however, would still fall below the Soviet scientific norm of 292 eggs per capita.

Wool

USSR wool production in 1978 totaled a near-record 462,000 tons (greasy basis), close to 5 percent larger than 1971-75 average output.

Imports of wool (scoured) in 1977 totaled a record 112,000 tons, up 2 percent from a year earlier. Major suppliers were Australia, New Zealand, Argentina, and the People's Republic of Mongolia. Wool exports totaled 2,500 tons, up 20 percent from the sharply reduced level in 1976. Major markets were the United Kingdom, Czechoslovakia, and Bulgaria.

Livestock Product Plans

Higher goals for average output of meat, milk, and eggs during this 10th Five-Year Plan (1976-80) appear to have been made. According to L. N. Kuznetsov⁹, a Deputy Minister of Agriculture, the average goals for these products have been boosted above previously reported average goals for 1976-80, as follows:

Product	1976-80 official plan ¹	1976-80 "revised" plan
<i>Average annual output</i>		
Meat (million tons) . . .	15.4	16.4
Milk (million tons) . . .	95.3	96.2
Eggs (billions)	60.8	62.4

¹ Osnovnie napravleniya razvitiya selskovo khozyaistva v desyatoy pyatiletke, (Moscow: Ekonomika, 1976), p. 79.

Based on actual output during the first 3 years of the 1976-80 plan period, the average output plans presented by Kuznetsov for milk and eggs seem reasonable and attainable, especially for eggs. In the case of meat production, however, the reported 16.4-million-ton average goal appears unrealistic and unreasonable. In order to achieve this goal, meat production in the next 2 years would have to reach an average of somewhat over 19 million tons—an unlikely prospect. A more reasonable prospect would be the 15.4-million-ton average goal presented in the official plan for 1976-80. (*Angel O. Byrne*)

NEAR-RECORD COTTON CROP

Cotton production in the USSR in 1978 totaled 8.5 million tons (seed cotton basis), as planned. Although output was down 3 percent from the 1977 record, it was the second largest cotton crop. The area planted to cotton reached a record 3,038,000 hectares, up 46,000 hectares from a year earlier.

Adverse weather plagued the cotton crop during much of the growing season. Torrential spring rains and flooding made it necessary to replant well over a million hectares, or about a third of the total cotton area. The replantings delayed development from several weeks up to almost a month in some areas. This delayed growth rendered the crop more vulnerable to the onset of cold weather and a freeze in early October. The extent of frost damage to the crop, especially in the late planted areas, is not known. However, some

areas reported major difficulties because of delayed plantings, cooler-than-usual summer temperatures, the onset of cold and frost in October, and above-normal rainfall in November. A large amount of cotton bolls apparently did not mature and open fully, thus reducing yields.

Based on an estimated 31.6-percent ginning rate, cotton lint outturn from the 1978 crop will total 2.7 million tons, or 12.4 million bales¹⁰—down 300,000 bales from a year earlier.

In calendar 1977, total USSR exports of cotton lint reached a record 973,000 tons, up 11 percent from a year earlier. East European countries traditionally account for the bulk of these exports. Japan, which sharply reduced its imports in both 1975 and 1976, boosted its purchases 21 percent in

⁹*Zhivotnovodstvo*, no. 1, 1978, p. 2.

¹⁰One ton of cotton lint equals 4.593 bales of 480 pounds each.

1977 and was, next to Poland, the second largest buyer of Soviet cotton lint. On the other hand, France, which was the largest single buyer in 1976, reduced its purchases by a sharp 23 percent.

In 1977, USSR cotton lint imports dropped 19 percent, to 94,400 tons, the lowest since 1956. Egypt, traditionally the largest supplier, cut its cotton lint exports to the USSR by a drastic 50 percent in 1976 and by 22 percent in 1977, to a level of 27,000 tons—the lowest level since 1955. Syria, Iran, and Afghanistan supplied most of the USSR's cotton lint imports in 1977.

Production of cotton cloth in 1978 rose 2 percent from a year earlier, reaching a record 7 billion square meters. Cotton yarn output has not been reported but may have somewhat exceeded the 1.6 million tons produced in 1977. The USSR exported 234 million linear meters of cotton cloth in 1977, down 4 percent from the year-earlier level. Imports, on the other hand, rose 3 percent to a record 190 million linear meters. Cotton yarn exports, at 1.1 million tons, were up only slightly from the greatly reduced 1976 level, but imports rose 21 percent to a record 35,000 tons. (*Angel O. Byrne*)

GROWTH IN OILSEED PRODUCTION FALTERS

The USSR's production of the three major oilseeds—sunflowerseed, cottonseed, and soybeans—was only fair in 1978. Sunflowerseed production totaled only 5.31 million tons, 10 percent below 1977 and more than 2 million tons below plan.

Output of major oilseeds, USSR, 1971-1978

Year	Sunflower seed	Cotton seed	Soybeans
1,000 metric tons			
1971	5,663	3,691	535
1972	5,048	4,085	258
1973	7,385	4,363	424
1974	6,784	4,531	360
1975	4,990	4,807	780
1976	5,277	4,511	480
1977	5,904	4,693	540
1978	5,310	(5,100)	639

() = estimate.

A cold, wet summer and late harvesting undoubtedly hurt the sunflower crop. The Soviets still rely heavily on open pollinated varieties and have not been able to maintain crop rotations of adequate length to reduce the incidence of disease. Consequently, the USSR will continue to experience considerable variation in sunflower yields.

In the 9th Five-Year Plan (1971-75) production averaged just under 6 million tons, but in the first 3 years of the 10th Five-Year Plan (1976-80) production has averaged ½ million tons less. Since sunflowers are the basic vegetable oil source in the Soviet Union, the inability to meet production plans or even keep pace with historical production averages seriously questions the important role of the USSR in international oilseed and product markets.

Cottonseed production in 1978 is expected to reach a record of over 5 million tons. Historically, cottonseed output equals roughly 58 percent of the seed cotton crop.

Soybean production totaled 639,000 tons, the second highest quantity on record and 18 percent more than in 1977. Soviet soybean production is concentrated in the Far East, which experienced excellent growing conditions. In addition, the Soviets have expressed a desire to expand soybean production into European areas. A U.S. oilseed team that visited the USSR August 30-September 20, 1978, under the auspices of the US-USSR Agricultural Agreement, learned that soybean cultivation in European areas would be expanded from 180,000 hectares in 1978 to 450,000 hectares sometime in "the near future." Nonetheless, total soybean production would still be substantially below requirements.

Vegetable oil production in calendar year 1978 totaled just less than 3 million tons, of which 2.8 million tons were produced from oilseeds purchased by the Government. Production during the 1977/78 marketing year was 7 percent over 1976/77 (table 7). As of May, during the respective marketing years, production was up 11 percent in 1977/78 over 1976/77. However, lack of oilseed supplies caused crushings to fall off considerably during the summer of 1978. Vegetable oil production in June, July and August was the lowest since 1973. A major reason may be that the Soviets did not import the normal quantities of soybeans in 1978 to maintain oilseed crushing levels. During calendar 1978, the USSR imported approximately 800,000 tons of soybeans, down a third from 1977 and a half from 1976.

Per capita vegetable oil consumption in 1977 rose to 7.9 kilograms, equal to 1974, but far short of the 9.1 kilogram scientific norm (table 30). (*Michael D. Zahn*)

Table 5--- Production, trade, and available supplies of cotton lint, USSR,
crop years 1965/66-1978/79

Year beginning August 1	Procurements of seed cotton	Lint cotton : production 1/	Imports 2/	Exports 2/	Net exports	Supplies : available : for domestic : utilization
			1,000 metric tons			
1965/66	5,662	1,917	176	487	310	1,607
1966/67	5,981	2,006	156	523	367	1,639
1967/68	5,970	2,021	140	546	406	1,615
1968/69	5,945	1,952	152	495	339	1,613
1969/70	5,708	1,956	221	490	269	1,687
1970/71	6,890	2,344	249	534	285	2,059
1971/72	7,101	2,347	198	608	410	1,937
1972/73	7,296	2,400	146	697	551	1,849
1973/74	7,664	2,401	136	734	598	1,803
1974/75	8,409	2,660	138	775	637	2,023
1975/76	7,864	2,528	125	846	721	1,807
1976/77	8,281	2,615	104	934	830	1,785
1977/78	8,762	3/ 2,768	3/ 90	3/ 947	3/ 857	3/ 1,911
1978/79	8,500	4/ 2,686	4/ 90	4/ 900	4/ 810	4/ 1,876
1979/80						
1980/81						
1981/82						
1982/83						
1983/84						
1984/85						

1/ Soviet official data except for 1977/78 and 1978/79.

2/ Calendar year data converted to crop year basis.

3/ Estimates.

4/ Forecasts.

Table 6--Vegetable oil production by type, USSR, 1955-77

Year	Total										
	All sources	Government	Sunflower	Cotton	Linseed	Soybean	Castor	Mustard	Peanut	Hemp	Other
	1,168	NA	519	397	27	81	20	7	67	3	1
1955											
1956	1,526	NA	936	344	41	79	13	12	47	2	1
1957	1,685	NA	1,016	396	88	78	4	14	36	5	2/
1958	1,465	NA	860	360	78	84	6	10	18	6	2/
1959	1,886	NA	1,279	381	58	96	9	10	10	4	1
1960	1,586	1,280	1,001	404	35	92	8	10	8	2	2/
1961											
1962	1,815	1,414	1,286	406	46	13	4	12	2	2	2/
1963	2,114	1,647	1,528	427	44	28	10	23	12	1	1
1964	2,195	1,695	1,613	432	29	48	7	20	10	1	2/
1965	2,249	1,749	1,587	496	28	47	17	20	11	1	2/
1966	2,770	2,207	2,108	502	48	29	22	18	4	3	1
1967											
1968	2,732	2,290	2,009	530	64	39	28	13	7	3	2/
1969	3,021	2,532	2,227	550	95	58	24	18	6	3	1
1970	3,145	2,664	2,384	531	73	62	29	21	8	2	1
1971	2,979	2,546	2,295	467	75	54	30	14	6	1	1
1972	2,784	2,344	2,146	495	43	33	24	10	5	1	2/
1973											
1974	2,923	2,628	2,133	608	49	63	21	17	1	1	1
1975	2,841	2,557	2,004	647	57	39	22	9	1	2/	1
1976	2,677	2,396	1,714	648	64	169	20	14	1	2/	1
1977	3,412	3,101	2,560	668	43	26	33	29	2	2/	2/
1978	3,344	3,059	2,471	737	20	22	30	23	2	NA	1
1979											
1980	2,775	2,566	1,637	714	26	323	23	15	1	NA	1
1981	2,943	2,757	1,777	697	23	367	17	22	NA	NA	2/
1982											
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NA = Not available.

1/ Totals may not add because of rounding.

2/ Less than 500 tons.

3/ Includes 11,000 tons of corn oil.

Table 7--Vegetable oil production from domestic and imported oilseeds, USSR, monthly and cumulative, September-August, 1972/73-1978/79 1/

THIRD BUMPER BEET CROP EASES SUGAR SITUATION

Soviet sugarbeet production in 1978, at 93.8 million tons, was the third crop in a row to exceed 90 million tons and was the third largest crop on record. Output in 1976 was a record of almost 100 million tons and the 1968 crop totaled 94.3 million. Last year's yield of 25.1 tons per hectare lagged behind the record 26.6 tons in both 1968 and 1976. The 3.73 million hectares occupied by sugarbeets in 1978 were 6-8 percent smaller than in the preceding 2 years, which probably explains why the planned target of 96.2 million tons was not achieved.

Weather was a problem for sugarbeet producers and processors last year. Cool, wet weather in April delayed planting and weather conditions remained cool and damp during the growing season in the major sugarbeet areas. In August, however, rainfall averaged somewhat less than normal. Precipitation in September was double the normal amounts in the major beet areas and interfered with harvesting. In the RSFSR only 33 of the 67 refineries that were planned to be in operation by September 10 were processing beets by that date.¹¹ Thus, although 30,000 tons of beet sugar were produced in August 1978, the 1,478,000 tons of sugar produced from beets in September was 45,000 tons less than in September 1977.¹²

Government sugarbeet purchases probably were 3-4 million tons smaller than the 85 million bought in 1977 even though sugarbeet output was slightly larger than the 93.1 million tons produced in 1977. The decrease in sugarbeet purchases relative to production was largely attributable to the Ukraine, where sugarbeet procurements, at 47.6 million tons, were about 3 million less than in 1977; while production, at 56.1 million tons, was over half a million tons larger than the 1977 crop. Heavy precipitation during September in the sugarbeet-growing areas of the Ukraine probably caused beet procurements to be low relative to production.

Sugar production from beets in 1978/79 is expected to total 8.3 million tons, 2 percent more than in 1977/78 and the largest amount since 1973/74. After a slow September, sugarbeet processing proceeded well during October-December, with 489,000 tons more beet sugar produced in the last half of 1978 than in the corresponding period of 1977. Thus, although a relatively large amount of sugarbeets was processed in the second half of 1978, the 75.2 million tons planned to be processed by the end of 1978 probably was not achieved since the almost 7.9 million tons of beet

sugar produced through December fell about 15 percent short of the planned 9.3 million tons.¹³

The shortfall in planned beet sugar output in the second half of 1978 probably is due both to sugarbeet procurements falling 7-8 million tons below the 89-million-ton target and to a relatively low sugar content in 1978 crop beets. The cool, rainy weather during the growing season probably contributed to this low sugar content in the beets. Over time, the sugar content of Soviet sugarbeets has been declining. For example, in the Ukraine, the sugar content of beets in 1972-76 was .93 percent lower than in 1966-70 and 1.56 percent less than in 1961-65.¹⁴ Reasons for the decline were: (1) unfavorable weather, (2) insufficient attention to beet quality, and (3) lack of incentives for producing beets with a high sugar content.

The 8.3 million tons of beet sugar produced in 1978/79 fell roughly 3.5 million tons short of requirements. During 1975-77, Cuba supplied the USSR with an average of 3.1 million tons (3.4 million raw value). Also, there have been recent reports or rumors of Soviet purchases from Brazil and the European Community. These purchases probably represent Soviet efforts to fill the gap between beet sugar output plus imports from Cuba and domestic sugar requirements. However, there is speculation that these third-country sugar purchases result from a relatively poor Cuban sugarcane crop or are being made to allow Cuba to increase sugar exports to the free market and thus maximize its export quota under the international sugar agreement. For this to be valid, however, more than the 300,000 tons of sugar now mentioned in the trade would probably have to be involved.

The Soviet sugar journal contains information on some 11th Five-Year Plan (1981-85) goals.¹⁵ Sugarbeet procurements by 1985 are to reach 97 million tons, from which 11.7 million tons of sugar are to be produced—implying a 12 percent extraction rate. Capital investments in the sugar industry are to total 1.85 billion rubles during the plan period. Those investments are to increase processing capacity of refineries 140,000 tons of beets per day, 18 percent over the 771,000-ton-per-day capacity in the 321 existing refineries. Of the new capacity, 54,000 tons are to be accounted for by seven new refineries with capacities ranging from 6,000 to 12,000 tons per day, and 86,000 tons are to be provided through reconstruction and expansion of existing refineries. (Fletcher Pope, Jr.)

¹¹*Sakharnaya promyshlennost*, no. 11, 1978, p. 3.

¹²All sugar data in this report are refined sugar unless otherwise indicated.

¹³*Sakharnaya promyshlennost*, no. 11, 1978, p. 2.

¹⁴*Sakharnaya promyshlennost*, no. 10, 1978, p. 30.

¹⁵*Sakharnaya promyshlennost*, no. 9, 1978, pp. 4-5.

POTATO, VEGETABLE, AND FRUIT PRODUCTION GAIN

Despite a 3-percent increase in potato production in 1978, the USSR crop again was mediocre. Output, totaling 85.9 million tons, was almost 10 million tons short of plan and close to 4 million tons less than the 1971-75 average.

The potato area, which has declined gradually since the sharp 825,000-hectare decrease in 1976, fell 15,000 hectares—compared with a 20,000-hectare drop in 1977. Although the potato area has decreased a total 872,000 hectares in the past 3 years, yields have remained relatively high. Last year, despite the smallest area planted since at least 1940, potato yields rose 3 percent above a year earlier to the third highest level on record.

Potatoes remain an important food staple in the USSR, despite Government efforts to lower carbohydrates and boost protein in the Soviet diet—mainly through larger availabilities of meat and meat products. However, meat output in the USSR has grown slowly and still is not meeting rising demand. Thus, consumption of potatoes continues high. In 1977, per capita consumption of potatoes rose 3 percent above the year-earlier level to 122 kilograms. This equaled the 1971-75 average and was well above the Soviet scientific norm of 97 kilograms.

The 1978 USSR vegetable crop, totaling a record 26.3 million tons, rose 9 percent from a year earlier but fell more than a million tons below plan. The vegetable area was up 5 percent and yields were a record, up almost 8 percent from the year-earlier level.

In 1977, USSR imports of fresh vegetables (excluding potatoes) reached 191,000 tons, up 3 percent from year-earlier levels but more than a fifth below record imports in 1972. Major suppliers were Bulgaria, Egypt, and Romania. Imports of tomatoes and onions accounted for the bulk of total fresh vegetable imports. Fresh tomato imports rose 2 percent from a year earlier, while onion imports dropped almost 12 percent from the 1976 record.

Imports of canned vegetables totaled a record 927 million cans (standard unit weight). Major suppliers were Bulgaria, Hungary, and Romania.

Per capita consumption of vegetables (including melons) in 1977 was 89 kilograms, 3 kilograms above the preceding year but still 57 kilograms below the scientific norm.

Data are sparse on total vegetable production by type in the USSR. However, production of select vegetables by type in the socialized sector—which currently produces about 70 percent of the total—indicates that cabbage and tomatoes (followed by table beets, carrots, cucumbers, and onions) account for the largest share of total vegetable production on these farms. In 1977¹⁶, of a total of about 17.2 million tons of vegetables produced in the socialized sector, cabbage accounted for nearly 6 million tons; tomatoes, 4 million tons; table beets, 1.6 million tons; and carrots, 1.4 million tons. Cucumbers and onions accounted for about a million tons each.

Fruit production, including grapes, in 1978 may not have exceeded the 15.3-million-ton output in 1977. According to a report¹⁷ by the USSR Minister of Agriculture on December 28, 1978, the 5.6-million-ton production plan for grapes was evidently overfulfilled.

Soviet imports of fresh fruit in 1977 totaled 841,000 tons, down 4 percent from a year earlier. Oranges and apples—mainly from Morocco and Hungary, respectively—accounted for more than three-quarters of total fresh fruit imports. Dried fruit imports, totaling 113,000 tons, rose 12 percent above the reduced 1976 level. Raisins accounted for the largest share of these imports. The major suppliers of dried fruit were Iran and Afghanistan.

Per capita consumption of fruits and berries in 1977, at 41 kilograms, rose 5 percent above the 1976 consumption level, but was 72 kilograms below the scientific norm. (*Angel O. Byrne*)

CAPITAL INVESTMENT

Major Capital Outlays

Capital investment in the agricultural sector in 1978 totaled 34.4 billion rubles, of which 22.9 billion were from Government sources and the remainder from collective farms. Total investment was up 1.5 billion rubles from a year earlier and exceeded the plan by 900 million rubles. Capital investments in agriculture accounted for 26 percent

of total investments in the economy, compared with 27 percent in 1977.

A portion of the investments went to construct and restore livestock production facilities. The pace of investment in this area was about the same as

¹⁶*Vestnik Statistiki*, no. 10, 1978.

¹⁷TASS, December 28, 1978.

in 1977, with the exception of sheep facilities, which gained somewhat. Investments resulted in additional housing for 4 million head of cattle, 2.5 million swine, 4.4 million sheep, and 8.5 million layers. Capacity for broiler production was boosted by 60 million head of throughput annually, compared with additions of 50 million head in 1977.

This year, total capital investments in agriculture are planned at 34.8 billion rubles. Of this, 23.5 billion rubles will be from Government sources and the remainder from collective farms. (*Angel O. Byrne*)

Irrigation and Drainage

In 1978, 7 billion rubles were expended on irrigation, drainage, and other land reclamation projects—the same as in 1977. Some 760,000 hectares of newly irrigated land were brought into production, 100,000 hectares less than in 1977 and 62,000 short of plan. Irrigation of meadows and pastures accounted for 250,000 hectares. Drainage was carried out on 680,000 hectares, 18 percent less than in 1977 and over 260,000 hectares below the planned level. Plans for 1979 call for 805,000 hectares of newly irrigated land to be brought into production and an additional 980,000 hectares to be drained. (*Angel O. Byrne*)

Farm Machinery

Deliveries of farm machinery, except trucks, were relatively good in 1978. Truck deliveries, totaling 259,000, were down 9,000 units from 1977 and 11,000 units below plan. The 1976-80 plan goal calls for an annual average of 270,000 trucks to be delivered to agriculture. In the first 3 years, an average of only 265,000 trucks have been delivered each year. To meet the 1976-80 plan goal, at least 277,000 trucks would have to be delivered in 1979 and 1980.

Tractor deliveries were up sharply and exceeded the plan by 9,000 units. Total deliveries reached a record 371,000 units, surpassing the 1975 record of 370,000 units. Nonetheless, the plan goal for 1976-80 is to deliver an average of 380,000 tractors per year. It is doubtful that this goal can be met since average deliveries in 1976-78 amounted to only 368,000 units.

Grain combine deliveries grew to a record 111,000 units, up 10 percent over 1977 and 1,000 units above plan. Of all the major agricultural machine categories, combines will most probably meet the average 1976-80 plan goal of 108,000 deliveries. By 1980 grain combine inventories should be between 700,000 and 750,000 units; yet this would still be short of the 800,000-unit plan goal and the optimal 950,000 to 1 million units.

Agricultural machinery inventories have

increased very slowly despite the huge amounts of machinery delivered to agriculture each year. High scrapping rates (deliveries minus inventory increases during the year divided by inventories at the beginning of the year) are the primary cause for this dilemma. For most major categories of Soviet farm machinery, life expectancies range between 6 and 8 years.¹⁸ (*Michael D. Zahn*)

Agricultural Chemicals

In 1978, fertilizer deliveries, excluding feed additives, amounted to only 79 million tons, 2 million tons more than in 1977 but a million tons below the plan of 80.2 million tons (table 11). Feed additive deliveries fell by 300,000 tons to 2.2 million. Total fertilizer deliveries slowed to less than 2 percent above 1977, the slowest gain in deliveries since the 1950's. Deliveries of fertilizer to agriculture in the past few years have experienced serious problems in keeping pace not only with plan goals but in making positive gains from one year to the next. The slow rate of growth has already put the 1980 delivery goal of 120 million tons out of reach and makes the 1985 goal of 135-140 million tons appear beyond reasonable expectations.

The problem in meeting planned delivery goals can be traced to fertilizer production problems. Last year, planned production was scaled back to 101.5 million tons but the Soviets still fell 3.5 million tons short, producing only 98.0 million tons, or barely more than 1 percent over 1977 levels (table 10). The shortfall can be attributed to operational difficulties as opposed to capacity deficiencies since the entire 3.5-million-ton deficit developed in the second half of the year with fourth quarter 1978 production falling 1 million tons below the 1977 level.

Quarterly mineral fertilizer production, USSR, 1975-78

Year	1st Q	2nd Q	3rd Q	4th Q	Final
Million metric tons					
1978	25.1	25.2	23.7	24.0	98.0
1977	23.8	24.4	23.6	25.0	96.8
1976	22.3	23.3	22.5	24.1	92.2
1975	21.8	22.2	22.0	24.2	90.2

Despite operational problems and the difficulties they pose for short term plan performance, the long term development prospects do not appear bright. Last year only 3 million tons of new

¹⁸See *USSR Agricultural Situation: Review of 1977 and Outlook for 1978* for a discussion of this problem.

capacity were built compared with 4 million in 1977 and an annual average of 8 million tons between 1970 and 1976.

Overall, the Soviet fertilizer industry appears to be winding down in its ability to meet production plan goals. For example, the 1980 plan is 143 million tons, or 46 percent more than produced in 1978, while the 1985 plan calls for 170 million tons, or 73 percent more than produced in 1978. Both goals are well beyond reach. In addition, the current actual year-to-year gains in production are miniscule relative to the stellar performance of the late 60's and early 70's. Consequently, agriculture will continue to bear the full impact of this slowdown.

The ratio of nutrient substances in all fertilizers delivered to agriculture (excluding feed additives) has continued to shift toward a higher level of nitrogen, despite the strong demand for phosphates. During 1976-77, phosphate deliveries fell 2 million tons short of plan or 62.5 percent of the total shortfall for all fertilizers.¹⁹ Approximately 100 million hectares of arable land in the USSR (17 percent of the total) are deficient in phosphorus, with more than one-half located in the RSFSR.²⁰ Most deficient are the Volga Steppe, the Urals, Siberia, and Kazakhstan.²¹

The profit motive for continued fertilizer application still appears to be operative. In 1975, the profit on applied fertilizer in the Ukraine has been calculated at 78.2 percent or 173.4 rubles per centner of standard weight fertilizer.²²

Pesticide production in 1978 grew to a record 492,000 tons (standard units), an increase of 5,000 tons over 1977 production. In addition, the Soviets are net importers of pesticides. However, net imports in 1977 fell to 30,900 tons, down from 34,000 tons in 1976. For the 10th Five-Year Plan, pesticide production is running well behind. Production in 1980 is planned at 615,000 tons, with

domestic use scheduled to reach 628,000 tons. Herbicide use is planned to reach 245,000 tons or 39 percent of total pesticide use. According to the 1980 plan, organophosphate insecticides and acaricides, fungicides, and herbicides should account for 75 percent of domestic production. At the same time the production of DDT and other organochloride preparations will decrease. By 1985, the production of all pesticides is planned to reach 700,000-750,000 tons annually with an assortment of over 100 types.

V. A. Zakharenko recently published some detailed data on the returns to pesticides in the USSR during 1971-75. He divided pesticides into two categories—1) insecticides and fungicides, and 2) herbicides. The results of his study appear in table 12. Unfortunately, his category "area treated" includes the double counting of repeated applications. Therefore we cannot be absolutely positive of the area receiving at least one application. In the case of insecticide and fungicide applications, sufficient materials were applied to treat the entire areas sown to cotton, sugarbeets, tobacco and makhorka, potatoes, vegetables, fruits, berries, and grapes. Herbicide applications, on the other hand, were insufficient to treat entirely any of the listed crops but came very close, 93.1 percent, to allowing the full treatment of flax.

By using the average prices paid for selected crops (table 15), we can calculate the approximate relative average value returns to insecticides and fungicides, and herbicides. Insecticide and fungicide use on fruits, berries, and grapes returned an average of over 1 billion rubles annually during 1971-75. This was by far the largest aggregate value return to any crop treated with pesticides. The second most valuable return appears to be herbicide use on grain and pulses, followed by insecticide and fungicide use on potatoes and cotton. (*Michael D. Zahn*)

RIISING AGRICULTURAL PRODUCTION PRICES AND COSTS

Boost in Procurement Prices; Financial Aid to Farms

Following approval of decisions made in the July 1978 Plenum of the USSR Communist Party to improve the USSR agricultural sector, two resolutions were adopted in October 1978. One, to

increase profitability in the farm sector and, in turn, agricultural output; the other, to strengthen the economic base of debt-ridden state and collective farms.

The first resolution, which went into effect on January 1, 1979, sharply increases Government procurement prices for selected agricultural products. The new prices will cover output of milk and milk products, karakul skins, sheep and goats, potatoes, cucumbers, tomatoes, onions, and garlic. Basically, the new procurement prices for these products will vary according to the zone where

¹⁹*Khimiya v selskom khozyaistve*, no. 9, 1978.

²⁰*Selskaya zhizn*, September 14, 1978.

²¹*Zemledeliye*, no. 11, 1978; *Pravda*, July 23, 1978, p. 2.

²²F. Moiyuk, "Effektivnost khimizatsii zemledeliya", *Voprosy ekonomiki*, no. 7, 1978.

Table 10--Production of mineral fertilizers by type, USSR, 5-year averages, 1966-75, and annual, 1971-77

Year	Total	Nitrogen	Phosphate	Ground phosphate: rock	Potash	Trace elements
				1,000 metric tons		
Standard gross weight:						
1966-70 average	44,127	20,527	10,855	5,029	7,638	78
1971	61,398	29,530	14,826	5,420	11,556	66
1972	66,066	31,945	15,663	5,319	13,061	78
1973	72,332	35,310	17,305	5,395	14,224	98
1974	80,357	38,308	20,683	5,442	15,822	92
1975	90,202	41,628	23,816	5,573	19,097	88
1971-75 average	74,071	35,344	18,459	5,430	14,754	84
1976	92,244	41,970	25,844	4,372	19,977	81
1977	96,752	44,450	27,822	4,320	20,063	97
1978	98,000					
1979 <u>1/</u>	111,000					
1980 <u>1/</u>	143,000					
Nutrient weight <u>2/</u> :						
1966-70 average	10,379	4,210	2,030	955	3,177	7
1971	14,670	6,055	2,772	1,030	4,807	6
1972	15,931	6,551	2,929	1,011	5,433	7
1973	17,429	7,241	3,236	1,025	5,918	9
1974	19,352	7,856	3,868	1,034	6,586	8
1975	21,998	8,535	4,452	1,059	7,944	8
1971-75 average	17,877	7,248	3,451	1,032	6,138	8
1976	22,590	8,609	4,833	831	8,310	7
1977	23,493	9,114	5,203	821	8,347	8
1978						
1979						
1980 <u>1/</u> <u>3/</u>	33,880	13,510	8,850	700	10,820	

1/ Plan.

2/ Nitrogen--20.5 percent N, phosphates--18.7 percent P_2O_5 , ground rock phosphates--19 percent P_2O_5 , potash--41.6 percent K_2O .

3/ Khimiya v selskom khozyaistve, #6 (1978),² p. 4.

Table 11--Deliveries of mineral fertilizer to agriculture by type, USSR, 5-year averages, 1966-75, and annual, 1971-77

Year	Total		Nitrogen 1/	Phosphate 1/	Ground phosphate rock	Potash	Trace elements	Feed additives	
	Including feed additives	Excluding feed additives						Urea	Feed phosphates
Standard gross weight:									
1966-70 average									
	36,977	NA	17,171	2/ 9,878	4,508	5,340	79	--	NA
1971	50,547	50,020	25,279	13,057	4,916	6,703	65	--	527
1972	54,795	53,932	27,346	13,968	4,756	7,784	78	90	773
1973	59,988	58,472	30,361	14,606	4,740	8,667	98	159	1,358
1974	65,884	63,841	32,665	17,520	4,650	8,914	92	243	1,800
1975	75,718	73,537	35,798	20,478	4,731	12,444	86	334	1,847
1971-75 average	61,386	59,960	30,290	15,926	4,759	8,902	84	165	1,261
1976	77,732	75,010	35,376	21,751	4,395	13,407	81	382	2,340
1977	79,760	76,984	36,694	22,918	4,307	12,981	84	435	2,341
1978		79,000							
1979 3/		85,600							
1980 3/	120,000	115,000							
Nutrient weight 4/:									
1966-70 average									
	8,453	NA	3,520	2/ 1,847	857	2,221	7	--	NA
1971	11,451	11,352	5,182	2,442	934	2,788	6	--	99
1972	12,530	12,367	5,606	2,612	904	3,238	7	18	145
1973	13,756	13,470	6,224	2,731	901	3,605	9	32	254
1974	14,958	14,572	6,696	3,276	884	3,708	8	50	336
1975	17,665	17,251	7,339	3,829	899	5,176	8	68	346
1971-75 average	14,072	13,802	6,209	2,978	904	3,703	8	34	236
1976	18,255	17,739	7,252	4,068	835	5,577	7	78	438
1977	18,561	18,034	7,522	4,286	818	5,400	8	89	437
1978									
1979									
1980									

-- = Negligible.

NA = Not available.

1/ Excluding feed additives.

2/ Includes feed additives.

3/ Plan.

4/ Nitrogen--20.5 percent N, phosphates--18.7 percent P₂O₅, ground rock phosphates--19 percent P₂O₅, potash--41.6 percent K₂O.

Table 12--Average annual area treated with insecticides and fungicides, and herbicides, and total returns to treatment for the years 1971-75

	Insecticides and fungicides						Herbicides					
	: Area : treated 1/ :	: Total : crop : area :	: Maximum : proportion : of crop area : treated 1/ :	: Total annual : return due to : treatment :	: Area : treated 1/ :	: Total : crop : area :	: Maximum : proportion : of crop area : treated 1/ :	: Total annual : return due to : treatment :	: Area : treated 1/ :	: Total : crop : area :	: Maximum : proportion : of crop area : treated 1/ :	: Total annual : return due to : treatment :
	1,000 hectares	Percent	1,000 tons	1,000 hectares	Percent	1,000 tons	1,000 hectares	Percent	1,000 tons	1,000 hectares	Percent	1,000 tons
Grain and pulses	22,508	123,988	18.2	2,768	34,092	123,988	27.5	8,632				
Flax	1,025	1,234	83.1	292	1,149	1,234	93.1	184				
Cotton	9,328	2,810	332.0	1,119	1,052	2,810	37.4	158				
Sugarbeets	7,172	3,527	203.3	6,455	1,115	3,527	31.6	1,450				
Vegetable oil crops	816	6,030	13.5	114	163	6,030	2.7	49				
Tobacco and makhorka	474	184	257.6	24	NA	184	NA	NA				
Potatoes	10,325	7,953	129.8	5,163	559	7,953	7.0	559				
Vegetables	1,736	1,601	108.4	1,736	206	1,601	12.9	165				
Fruits, berries and grapes	11,437	3,304	346.2	3,717	79	3,304	2.4	24				
Feed crops	NA	64,932	NA	NA	5,046	64,932	7.8	NA				

NA = Not available.

1/ Area treated more than once is counted more than once; therefore, only the maximum possible area treated can be calculated. In cases where the maximum proportion of the crop area treated exceeds 100 percent, the coverage would indicate the probability that at least one application was made to the entire crop area.

Source: V. A. Zakharenko, "Obosnovanie optimalnykh urovney primeneniya khimicheskikh sredstv zashchity rasteny v zemledelii", Sbornik nauchnykh trudov, No. 83, Vsesouzny nauchno-issledovatel'skiy institut ekonomiki sel'skovo khozyaystva, Moscow, 1977.

produced, and also to grade and quality. In the case of vegetables, aside from potatoes, the price increase is also to be determined according to seasonality of the crop. The new boost in prices of these commodities will total 3.2 billion rubles.

According to one report²³, Government procurement prices will increase, on the average, 15 percent or 33 rubles per ton for milk, 18 percent or 981 rubles for wool, 32 percent or 23 rubles for potatoes, and 13 percent or 13 rubles per ton for vegetables. The following tabulation indicates how the total 1979 purchase price increase is distributed among these products:

Product	Million rubles	Share of total increase (percent)
Milk.	2,199	69
Wool	423	13
Karakul skins	46	2
Potatoes	322	10
Mutton	110	3
Vegetables	100	3
Total.	3,200	

As shown in the above tabulation, milk will account for the largest share of the total 3.2-billion-ruble boost in procurement prices—followed by wool and potatoes. These products reportedly have not been highly profitable for some time. For example, in 1977, milk production reportedly was unprofitable in 47 percent of collective farms, wool production in 73 percent, and potato farming was unprofitable in 70 percent.²⁴ With the boost in procurement prices, the Soviets aim to raise profitability on Government sales of these products nearly 19 percent on collective farms and almost 17 percent on state farms.

In accordance with the July Plenum, the new procurement price increases will not result in any change in the current retail prices of these commodities. The total cost of the planned increase will be borne by the Government. In 1977, the Government allocated 22 billion rubles to compensate for the difference between the cost of production and retail prices of livestock, milk, potatoes, vegetables, and other agricultural products. The increase in procurement prices will raise the Government subsidy for agricultural products to 25 billion rubles—an increase of close to 15 percent.

The second resolution, which will probably go into effect sometime in 1979, stipulates that extended and overdue bank loans of financially depressed and low-profit state and collective farms will be written off at a total 7.3 billion rubles. Furthermore, payment of unsecured loans totaling 4 billion rubles will be deferred for 12 years. Govern-

ment assistance to these state and collective farms will be as follows:

Organization	Debts written off	Loan payments deferred	Total
	Million rubles		
Collective farms	2,200	2,041	4,241
State farms.	5,100	1,959	7,059
Total.	7,300	4,000	11,300

(Angel O. Byrne)

Production Costs and Profits

The Soviets have published in recent years the "average primary production costs" or *sebestoimost* for selected agricultural commodities. *Sebestoimost* is only a partial cost since it excludes the interest on capital and rent on land. Nonetheless, *sebestoimost* data can be used as a proxy for observing changes in the general costs of production in the USSR. Tables 13 and 14 display the *sebestoimost* ruble figures for selected agricultural commodities on collective and state farms.

In 1977, the unit cost of production was significantly higher than in 1970 for nearly all items. For example, the figures for grain (excluding corn) were up 30 and 55 percent, respectively, on collective and state farms. Similarly, the cost of producing cattle for slaughter was up 41 and 46 percent. Only for eggs produced on state farms did the *sebestoimost* value decrease between 1970 and 1977.

The increased cost of agricultural production presents serious problems for Soviet policymakers. On the one hand, the USSR has maintained a policy of stable and low retail food prices even if such prices result in shortages. Unfortunately, the inability to constrain production costs leads directly to higher subsidization of agricultural production by having the State purchase commodities through the procurement system at high prices and resell these goods on the retail market at substantially lower prices. If Soviet figures are accurate, this type of subsidization amounted to 22 billion rubles in 1977, or 18 percent of gross agricultural output.

At the July 1978 Plenum, General Secretary Brezhnev strongly reaffirmed the policy of no retail price increases on food items (some items such as imported coffee are the exception). Consequently, subsidization seems destined to continue as the cost of production rises.

Several Soviet articles in 1978 described the rising cost of agricultural production. Apparently, the increases are not limited to a single source but are widespread across all inputs. For example, labor costs per hectare of harvested land on collective farms grew 24 percent between 1965 and 1976. The

²³Finansy SSSR, no. 10, 1978, p. 2.

²⁴Finansy SSSR, no. 10, 1978, p. 3.

Table 13--Average primary production costs (sebstoimost) for basic agricultural products on collective farms, 1960-1977

[illegible]

Note: Data unavailable if entry is blank.

1/ Excluding corn.
2/ Including interfarm associations.

Table 14--Average primary production costs (sebstoimost) of basic agricultural products on state farms, 1960-77

Year	Grain 1/	Cotton	Sugar- beets	Sun- flowers	Potatoes	Vege- tables	Cattle : for : slaughter:	Hogs : for : slaughter:	Sheep : for : slaughter:	Milk	Wool	Eggs
1960												
1961												
1962												
1963												
1964												
1965	50	282	23		63	64	1,167	1,261	662	181	3,096	82
1961-65 average												
1966												
1967												
1968												
1969	60	365	28		76	84	1,267	1,114	785	185	3,987	67
1970	53	362	29		76	84	1,277	1,111	736	189	3,585	64
1966-70 average												
1971	59	373	31		83	88	1,385	1,178	780	197	3,929	63
1972	62	378	36		107	100	1,530	1,297	874	212	4,471	62
1973	58	378	30		84	84	1,496	1,226	889	217	4,492	60
1974	70	403	36		112	89	1,609	1,262	952	227	4,840	58
1975	94	439	40		93	98	1,842	1,489	1,048	247	5,373	60
1971-75 average	69	394	35		96	92	1,572	1,290	909	220	4,621	61
1976	69	430	35		111	96	1,857	1,475	1,200	261	5,957	63
1977	82	450	36		111	101	1,868	1,424	1,245	262	5,971	61
1978												
1979												
1980												
1976-80 average												

Rubles
per 1,000

Rubles per ton

Note: Data unavailable if entry is blank.

1/ Excluding corn.

cost of truck transportation rose 28 percent over the same period, and on average, the cost of all industrial inputs in agriculture rose 32 percent.²⁶

Livestock production has been hit severely by rising costs in recent years. During 1974-76, collective farm profits from livestock production fell to only 5.5 percent; and in 5 of 7 years from 1970-76, milk was produced at a loss on collective and state farms.²⁷ Feed costs are the primary cause of rising costs in the livestock sector. Between 1966 and 1973, the cost of feed as a share of the increase in the *sebestoimost* of milk on collective and state farms represented 62-77 percent, cattle for slaughter 65-80 percent, and hogs for slaughter 87-97 percent.²⁸ In recent years, as mixed feed has become a more important component in Soviet livestock feeding, the increases in mixed feed prices have placed additional upward pressure on the cost of production. For state farms in the Ukraine, mixed feed prices rose 29.2 percent between 1974 and 1976.²⁹

Table 15 shows how the average prices paid to agricultural producers have also risen over the years. However, the percentage rise in prices paid between 1970 and 1977 has generally not equalled the rise in production costs over the same period. Therefore, profit margins probably have worsened since 1970.

One Soviet author has presented a relatively complete profit picture for agricultural commodities in 1977 by comparing the average prices paid to the average primary production costs or *sebestoimost* (table 16). In 1977 both collective farms and state farms of the Ministry of Agriculture recorded actual losses for potatoes, sheep and goats, milk and milk products, wool, and karakul and astrakhan. A comparison between the table on profitability and specific commodity price increases that took place on January 1, 1979, indicates that the Soviets are price conscious and have tried to correct the low profitability of some agricultural commodities. (*Michael D. Zahn*)

US-USSR TRADE

The value of U.S. agricultural exports to the USSR in 1978 (excluding transshipments) totaled \$1.7 billion³⁰, compared to the reduced \$1 billion level in 1977. Lower domestic grain supplies resulting from the reduced USSR 1977 grain crop raised import requirements. Thus, U.S. grain exports to the USSR, at 13 million tons³¹, almost doubled in volume over the sharply reduced 1977 level. U.S. wheat exports remained at the same 3-million-ton level as a year earlier, but corn exports, at 10 million tons³², almost tripled in volume. Rice exports to the USSR, at 16,342 tons, dropped almost 72,000 tons from 1977.

²⁶A. Silin, "Vliyanie intensifikatsii na uroven sebestoimosti", *Ekonomika selskovo khozyaistva*, no. 2, 1978.

²⁷V. Dobrynin, "Problemy molochnoy skotovodstva", *Ekonomika selskovo khozyaistva*, no. 5, 1978.

²⁸V. F. Klyuykov, A. P. Golikova, "K voprosu o snizhenii sebestoimosti proizvodstva produktov zhivotnovodstva", *Spornik nauchnykh trudov*, no. 75, VNIESKH, Moscow, 1975.

²⁹Ya. K. Belousko, "O poryadke ustanovleniya optovykh tsen na kombikorma", *Zhivotnovodstvo*, no. 12, 1978.

³⁰\$1.8 billion, including transshipments.

³¹13.5 million tons, including transshipments.

³²10.5 million tons, including transshipments.

U.S. soybean exports totaled 744,338 tons³³, compared with 579,000 tons a year earlier. In 1978, the USSR also purchased small quantities of U.S. cattle hides, nuts and fruit, peanuts, and other products.

Also in 1978, the United States made the largest sale of breeding cattle to the USSR thus far. The total 545-head shipment was comprised of 95 dairy breeding bulls (85 Holstein and 10 Brown Swiss) and 450 Santa Gertrudis beef cattle. The previous large sale was 218 head shipped in 1976.

U.S. agricultural imports from the USSR in 1978 reached \$12.4 million, up \$1.5 million from the year-earlier level. Fur skins, casein, and cigarettes (Turkish leaf tobacco) accounted for most of the total value.

In FY 1979 (October-September), U.S. agricultural exports to the USSR are estimated at about \$1.5 billion, down about 12 percent from a year earlier. Most of this reduction probably will be in grain since the Soviets produced a record crop last year. Joint U.S.-USSR grain agreement consultations are held twice a year. The agreement, now in its third year, will expire in September 1981. (*Angel O. Byrne*)

³³817,000 tons, including transshipments.

Table 15--Average prices paid for state procurements of selected agricultural commodities, 1965, 1970-77 1/

Year	Grain	Cotton	Sugar- beets	Sun- flowers	Meat	Milk	Wool	Eggs
	- - - - -	- - - - -	- - - - -	Rubles per ton	- - - - -	- - - - -	- - - - -	Rubles per 1,000
1965	89.6	442.2	28.5	224.5	993.5	148.5	3,280.9	78.8
1970	97.2	555.0	28.4	193.6	1,465.0	192.0	4,461.3	90.5
1971	98.8	553.0	28.4	197.1	1,521.1	200.2	4,514.6	91.3
1972	104.2	531.3	34.1	197.4	1,489.7	200.3	4,526.1	91.2
1973	97.1	537.7	35.0	212.9	1,509.7	204.2	4,554.4	91.9
1974	100.2	574.3	33.5	220.0	1,535.5	204.7	4,652.7	90.4
1975	111.8	583.3	34.7	198.4	1,523.1	215.1	4,648.7	89.2
1971-75 average:	102.4	555.9	33.1	205.2	1,515.8	204.9	4,579.3	90.8
1976	96.0	592.9	34.0	186.5	1,478.8	217.0	4,580.6	95.8
1977	107.1	608.0	36.7	199.5	1,569.3	234.7	4,760.8	92.4
1978								
1979								
1980								
1976-80 average:								

Note: Average prices paid include premium payments for overfulfillment of plan.

1/ Calculated from payments for agricultural commodities sold to the state and procurement quantities.
2/ Live weight.

Table 16--"Profitability" of agricultural production realized from state sales in 1977 expressed in relation to primary production costs

	Collective farm	State farms of the Ministry of Agriculture
	<u>Percent</u>	
Grain	72.5	40.6
Sunflowers	147.6	136.6
Cotton	37.4	34.5
Sugarbeets	17.0	-1.2
Tobacco	29.0	25.4
Potatoes	-17.5	-17.0
Vegetables	11.2	7.8
Grapes	45.5	29.3
Cattle (live weight)	10.7	9.9
Hogs (live weight)	2.3	12.1
Sheep and goats (live weight)	-0.8	-6.7
Poultry	-3.9	5.6
Milk and milk products	-0.1	-6.3
Wool	-9.3	-9.8
Karakul and astrakhan	-2.1	-10.3
Eggs	17.5	60.0

Source: R. Gumerov, "Sistema zakupochnykh tsen i eyo sovershenstvovanie" Zakupki selskokhozyaistvennykh produktov, #1 (1979).

OUTLOOK FOR 1979

The USSR's planned 5.8-percent increase in gross agricultural production during 1979 probably will not be achieved. Weather during the past 3 years has been relatively favorable for agriculture, and output increased by 4 percent or somewhat more, in both 1977 and 1978. This rather good performance compares with an average increase of 2.6 percent during the 10-year period 1964-68 to 1974-78. Thus, unless weather during this growing season is again better than usual, gross Soviet agricultural output in 1979 is likely to be little higher than in 1978, if any. Expected gains in livestock and poultry output during 1979 likely will be offset, at least partly, by decreases in crop production.

Encouragement for increased output of agricultural products by the private sector (private plots and privately-owned livestock) is to continue during 1979. In fact, the private sector is described by N. K. Baybakov, Chairman of Gosplan USSR, as an important resource in helping to achieve a further increase in agricultural production.³⁴ Collective and state farms have been instructed to provide aid to the private sector in the following forms: young livestock, feed for privately-owned livestock, and plowing of private plots. That is expected to result in a sizable increase in livestock production by the private sector—particularly in view of the significant increases in privately-owned livestock that have occurred during 1976 and 1977—but it probably will have little effect on private-plot production of potatoes, vegetables, and fruit.

Delayed harvesting and cool, wet weather interfered with fall field work in 1978. As a result, the area sown to winter crops totaled only 37.3 million hectares, more than 9 percent short of the planned 41.1 million. Winter grains account for most of this shortfall. Winter grains occupy an area estimated at 33 million hectares, 4 million less than both the planned level and also the areas seeded to winter grains in 1976 and 1977. The shortfall is believed to be mainly in winter rye because of last fall's extremely wet weather in the northern half of European USSR. The area plowed last fall for seeding this spring totaled 110 million hectares, 5 percent less than the 116 million planned.

Soviet grain production in 1979 is planned at 226.8 million tons, about midway between the 220 million tons planned for 1978 and the 235 million for 1980. The actual outturn of the 1979 Soviet grain crops will depend on near-term weather impacts on winter grains and weather patterns during the spring planting and summer growing season for the spring crops. Even with relatively

favorable weather conditions so far this season, the odds suggest that it is unlikely that grain production in 1979 will match last year's record of 235 million tons, and production could fall below planned production levels for 1979. Grain usage in the Soviet Union will probably expand during the coming season in response to expected increases in livestock and poultry production.

Prospects for crops, other than grain, in 1979 are mixed. Cotton production should exceed the 8.5-million-ton crop in 1978 and might surpass the 1977 record of 8.8 million tons of unginned cotton. Also, the poor 1978 sunflowerseed crop of 5.31 million tons should be easily surpassed. On the other hand, sugarbeet, potato, and vegetable crops in 1979 likely will be smaller than those produced during the cool, wet 1978 growing season. Plans call for production in 1979 of 7.6 million tons of sunflowerseeds and 97.2 million tons of sugarbeets. Although no planned goal for cotton is available, pledges by the cotton-growing republics for 1979 total almost 9 million tons.

Livestock and poultry production during the first half of 1979 should be significantly higher than in the corresponding period of 1978. Livestock numbers at the beginning of 1979 were at record levels, except for sheep and goats, and total livestock numbers were significantly larger than on January 1, 1978. Also, the livestock feed situation during 1978/79 is very good because of the record grain crop and good forage crops harvested in 1978. There are regional problems of quality with grain and forage because of heavy rains during harvesting.

Soviet livestock performance during the second half of 1979 will depend heavily on weather conditions during the upcoming growing season this year. Favorable conditions likely would result in some further increase in livestock numbers and in output of livestock products. On the other hand, a drought would result in increased slaughtering, which would tend to boost meat output during certain months but reduce some livestock and poultry numbers, as well as lower milk yield per cow and eggs produced per hen.

Livestock and poultry production goals for 1979 call for 16.6 million tons of meat (carcass weight), 98.6 million tons of milk, 478,000 tons of wool, and 64.9 billion eggs. Except for eggs, the percentage increases over the 1978 output levels required to meet the planned 1979 goals for the various livestock products, are several times larger than the percentage increases in the livestock herds and flocks from which these products are produced. Thus, except for eggs, attainment of the 1979 planned goals seems unlikely under average conditions. (*Fletcher Pope, Jr.*)

³⁴*Pravda*, November 30, 1978.

Table 17--U.S. agricultural trade with the USSR, 1971-78

Commodity	1971	1972	1973	1974	1975	1976	1977	1978 1/	1979	1980
Exports 2/										
Wheat		160.0	556.6	124.1	672.7	264.2	426.8	355.8		
Coarse grain 3/	26.3	232.7	359.9	176.1	457.8	1,180.2	412.4	1,115.0		
Corn	24.5	186.5	294.5	159.5	452.6	1,170.1	412.4	1,115.0		
Soybeans	--	53.6	87.2	--	2.9	126.4	154.4	219.3		
Cattle hides	10.9	9.6	1.1	7.9	5.2	2.5	.8	8.1		
Fruits, nuts, & berries	1.5	1.1	2.8	5.3	6.1	8.4	20.4	31.8		
All other	5.2	2.4	9.5	10.3	25.6	23.2	38.0	35.5		
Total	44.6	459.4	1,017.1	323.7	1,170.3	1,604.8	1,052.8	1,765.5		
Imports										
Bristles	4/	.2	.5	.4	4/	--	--	--		
Casein and glue	--	--	.2	2.0	1.7	.7	1.7	2.4		
Furskins	2.7	3.0	3.1	4.5	3.5	6.1	7.4	8.4		
Gelatin	--	4/	.3	.3	4/	.1	4/	--		
Licorice root	.1	--	--	--	1.0	.6	--	--		
All other	.2	.6	.6	1.3	1.0	.9	1.8	5/ 1.6		
Total	3.0	3.8	4.7	8.5	7.2	8.4	10.9	12.4		

-- = Negligible or none.

1/ Preliminary. Includes transshipments.

2/ Including transshipments through Canada, Belgium, the Netherlands, and West Germany.

3/ Includes corn, rye, barley, oats, and sorghum.

4/ Less than \$50,000.

5/ Includes \$601,000 for cigarettes made from turkish tobacco.

Source: U.S. Foreign Agricultural Trade Statistics Reports, calendar year.

Table 18--Area, yield, and production of grain, USSR, 5-year averages, 1966-75, and annual, 1971-78

Year	Wheat			Rye	Barley	Oats	Corn	Other 1/	Total grain
	Winter	Spring	Total						
1,000 hectares									
Area:									
1966-70 average	18,280	48,894	67,174	11,505	20,331	8,680	3,517	10,876	122,083
1971	20,694	43,341	64,035	9,507	21,566	9,632	3,332	9,865	117,937
1972	14,979	43,513	58,492	8,160	27,269	11,358	4,012	10,867	120,158
1973	18,340	44,815	63,155	7,012	29,387	11,887	4,031	11,266	126,738
1974	18,610	41,066	59,676	9,810	31,079	11,567	3,955	11,100	127,187
1975	19,593	42,392	61,985	8,010	32,547	12,107	2,652	10,619	127,920
Average	18,443	43,025	61,487	8,500	28,370	11,310	3,596	10,743	123,988
Metric tons per hectare									
Yield:									
1966-70 average 2/	1.96	1.11	1.34	1.12	1.50	1.38	2.72	1.18	1.37
1971	2.31	1.18	1.54	1.35	1.60	1.52	2.58	1.20	1.54
1972	1.96	1.30	1.47	1.18	1.35	1.24	2.44	1.09	1.40
1973	2.70	1.35	1.74	1.53	1.87	1.47	3.28	1.44	1.76
1974	2.40	.95	1.40	1.55	1.74	1.32	3.05	1.35	1.54
1975	1.87	.70	1.07	1.13	1.10	1.03	2.74	.87	1.09
Average	2.26	1.10	1.45	1.36	1.53	1.31	2.82	1.19	1.47
1976	2.59	1.24	1.63	1.55	2.03	1.61	3.06	1.45	1.75
1977	2.51	.97	1.48	1.27	1.53	1.41	3.26	1.24	1.50
1978	3/2.85	3/1.38	4/1.92	4/1.76	3/1.81	3/1.56	4/3.55	3/1.27	4/1.84
1979									
1980									
Average									
1,000 metric tons									
Production:									
1966-70 average	35,888	54,304	90,192	12,834	30,454	11,938	9,558	12,785	167,562
1971	47,787	50,973	98,760	12,787	34,571	14,650	8,597	11,810	181,175
1972	29,380	56,613	85,993	9,633	36,813	14,095	9,830	11,874	168,238
1973	49,435	60,349	109,784	10,759	55,044	17,516	13,216	16,211	222,530
1974	44,698	39,215	83,913	15,223	54,208	15,302	12,104	14,958	195,708
1975	36,651	29,573	66,224	9,064	35,808	12,495	7,328	9,199	140,118
Average	41,590	47,345	89,941	11,493	43,289	14,812	10,215	12,810	181,554
1976	44,594	52,288	96,882	13,991	69,539	18,113	10,138	15,092	223,755
1977	51,971	40,190	92,161	8,480	52,687	18,407	10,979	13,013	195,727
1978	3/66,000	3/54,800	4/120,800	4/13,600	3/59,300	3/18,900	4/9,000	3/13,400	4/235,000
1979									
1980									
Average									

1/ Includes millet, buckwheat, rice, pulses, and miscellaneous grains.

2/ Calculated from area and production data when official yield data are not available.

3/ Estimate.

4/ Preliminary.

Table 19--Area, yield, and production of selected nongrain crops, USSR,
5-year averages, 1966-75, and annual, 1971-78

Year	Seed cotton	Sugar- beets	Sun- flowers	Fiber flax	Potatoes	Veget- ables	Fruit, berries, grapes 1/	Tobacco 2/
	<u>1,000 hectares</u>							
Area:								
1966-70 average	2,527	3,582	4,837	1,341	8,238	1,440	2,625	144
1971	2,770	3,321	4,498	1,244	7,894	1,519	3,272	160
1972	2,735	3,486	4,394	1,251	7,960	1,578	3,264	169
1973	2,742	3,553	4,745	1,248	8,017	1,621	3,268	168
1974	2,880	3,610	4,686	1,210	7,983	1,635	3,339	172
1975	2,924	3,666	4,045	1,215	7,912	1,652	3,379	173
Average	2,810	3,527	4,474	1,234	7,953	1,601	3,304	168
1976	2,949	3,754	4,354	1,214	7,087	1,562	3,356	183
1977	2,992	3,761	4,549	1,209	7,067	1,567	3,370	182
1978	3,038	3,763	4,558	1,197	7,042	1,646	NA	NA
1979								
1980								
Average								
	<u>Metric tons per hectare</u>							
Yield:								
1966-70 average	2.41	22.8	1.32	.34	11.5	13.2	3.7	1.44
1971	2.56	21.9	1.26	.39	11.7	13.2	3.8	1.44
1972	2.67	22.3	1.14	.36	9.8	12.2	2.9	1.64
1973	2.80	24.7	1.55	.35	13.5	15.5	4.1	1.64
1974	2.92	21.6	1.44	.33	10.1	14.1	3.7	1.70
1975	2.69	18.1	1.23	.41	11.2	13.5	4.2	1.67
Average	2.73	21.7	1.32	.37	11.3	13.7	3.8	1.62
1976	2.81	26.6	1.16	.42	12.0	15.2	4.5	1.66
1977	2.93	24.8	1.28	.40	11.8	14.6	4.5	1.66
1978 3/	2.80	24.9	1.16	.32	12.2	15.7	NA	NA
1979								
1980								
Average								
	<u>1,000 metric tons</u>							
Production:								
1966-70 average	6,099	81,118	6,389	458	94,813	19,472	9,710	207
1971	7,101	72,185	5,663	486	92,655	20,840	12,370	232
1972	7,296	76,424	5,048	456	78,329	19,941	9,570	277
1973	7,664	87,047	7,385	443	108,200	25,927	13,351	275
1974	8,409	77,948	6,784	402	81,022	24,811	12,441	293
1975	7,864	66,314	4,990	493	88,703	23,351	14,235	290
Average	7,667	75,984	5,974	456	89,782	22,774	12,393	273
1976	8,278	99,872	5,277	509	85,102	24,991	15,260	303
1977	8,762	93,103	5,904	485	83,652	24,149	15,275	302
1978 3/	8,500	93,800	5,310	384	85,900	26,300	NA	NA
1979								
1980								
Average								

NA = Not available.

- 1/ Bearing area.
2/ Excluding makhorka.
3/ Preliminary.

Table 20--Area, yield, and production of selected forage crops, USSR,
5-year averages, 1971-80, and annual, 1971-78

Year	Hay <u>1/</u>					Silage corn <u>2/</u>	Feed roots <u>3/</u>
	Annual	Perennial	Tame total	Wild	Total		
<u>1,000 hectares</u>							
Area:							
1971	18,863	22,907	41,770	NA	NA	17,835	1,651
1972	18,021	24,243	42,264	NA	NA	17,896	1,770
1973	15,901	24,616	40,517	NA	NA	16,927	1,755
1974	16,066	25,505	41,571	NA	NA	17,127	1,703
1975	16,715	25,353	42,068	NA	NA	17,346	1,639
Average	17,113	24,524	41,637	NA	NA	17,426	1,704
1976	16,634	25,149	41,783	NA	NA	18,114	1,803
1977	15,770	26,095	41,865	NA	NA	15,557	1,705
1978						16,695	1,715
1979							
1980							
Average							
<u>Metric tons per hectare</u>							
Yield <u>4/</u> :							
1971	1.48	1.56	1.52	0.63	NA	11.7	20.6
1972	1.50	1.67	1.60	0.64	NA	11.2	20.7
1973	2.03	1.86	1.92	0.62	NA	16.3	24.9
1974	1.96	1.99	1.98	0.58	NA	12.9	24.0
1975	1.51	1.79	1.68	0.52	NA	10.8	19.3
Average	1.68	1.78	1.74	0.60	NA	12.6	21.9
1976	2.11	2.00	2.04	0.57	NA	14.9	26.0
1977	2.10	2.22	2.18	0.54	NA	15.5	24.9
1978						14.6	NA
1979							
1980							
Average							
<u>1,000 metric tons</u>							
Production:							
1971	27,911	35,741	63,652	49,020	112,672	210,862	36,694
1972	27,020	40,468	67,487	47,015	114,502	206,136	39,559
1973	32,288	45,799	78,087	47,971	126,058	281,744	47,106
1974	31,475	50,864	82,339	48,350	130,689	226,464	43,934
1975	25,260	45,354	70,614	41,843	112,457	192,981	34,424
Average	28,791	43,645	72,436	46,840	119,276	223,637	40,343
1976	35,024	50,301	85,325	43,428	128,753	227,136	49,975
1977	33,064	58,002	91,066	41,606	132,672	246,803	45,298
1978						248,618	43,781
1979							
1980							
Average							

NA = Not available.

1/ Includes hay equivalent of grass and legume haylage, green chop, and dehydrated meal.

2/ Includes corn silage and green chop.

3/ Includes sugarbeets for feed.

4/ Tame hay yields are calculated; official published yields include hay only and exclude hay equivalent of other grasses and legumes. Wild hay yields are published yields for socialized farms. Silage corn and feed root yields are published yields, which are slightly lower than calculated yields, indicating that a small part of production originates from intertilled or double-cropped area not included in area data.

Table 23--Livestock numbers and animal units as of January 1, 1978, by republic, USSR

Republic	Cattle	Cows	Hogs	Sheep	Goats	Poultry	Animal units
	:	:	:	:	:	:	1/
	---	---	---	---	---	---	---
	Thousand head						Million head
USSR total	112,690	42,592	70,511	141,025	5,586	880.9	139.1
Russian Federation	57,956	22,063	34,771	63,888	2,813	483.3	70.4
Ukraine	24,924	9,143	19,831	8,920	252	199.3	29.5
Belorussia	6,705	2,742	4,567	559	26	34.8	7.2
Uzbekistan	3,227	1,229	330	7,521	572	19.9	3.7
Kazakhstan	7,804	2,716	2,648	32,908	595	42.1	10.8
Georgia	1,531	593	827	1,922	102	15.2	1.7
Azerbaidzhan	1,691	631	169	5,061	194	14.9	2.1
Lithuania	2,178	887	2,546	70	4	12.8	2.7
Moldavia	1,042	396	1,751	1,161	19	16.2	1.8
Latvia	1,407	580	1,394	234	7	9.4	1.7
Kirgizia	948	367	263	9,819	194	9.3	2.0
Tadzhikistan	1,115	412	116	2,416	570	4.8	1.3
Armenia	759	290	207	2,301	45	9.3	1.0
Turkmenistan	573	217	135	4,095	192	4.5	1.0
Estonia	830	326	956	150	1	5.6	1.0

1/ In terms of cows. Conversion ratios as follows: cattle (other than cows) .6; hogs .3; total sheep and goats .1; and poultry .02; excludes horses.

Table 25--Livestock numbers in socialized and private sectors,
USSR, January 1, 1973-78

Organization	Cattle	Cows	Hogs	Sheep	Goats	Poultry
	1,000 head			Mil. head		
Collective farms and interfarm complexes:						
1973	44,071	14,243	30,677	52,649	582	NA
1974	44,933	14,723	32,089	52,833	612	NA
1975	46,320	15,067	33,124	52,907	588	NA
1976	48,167	15,323	25,729	51,576	575	NA
1977	47,827	15,537	28,475	50,380	477	NA
1978	48,443	15,757	30,699	49,005	416	NA
Interfarm complexes						
1973	NA	NA	NA	NA	NA	NA
1974	NA	NA	NA	NA	NA	NA
1975	NA	NA	NA	NA	NA	NA
1976	579	23	1,627	365	2	NA
1977	794	28	2,331	509	33	NA
1978	1,173	27	3,157	543	33	NA
State farms and other state enterprises:						
1973	35,259	11,634	22,607	58,697	495	NA
1974	36,718	12,212	24,385	62,388	565	NA
1975	38,293	12,611	25,498	65,121	618	NA
1976	39,402	12,854	19,943	64,862	665	NA
1977	39,706	13,062	22,812	64,959	776	NA
1978	40,995	13,456	25,009	66,899	847	NA
State farms						
1973	31,435	10,739	17,991	55,989	488	NA
1974	33,288	11,482	19,447	59,666	557	NA
1975	34,605	11,874	20,494	62,478	611	NA
1976	35,588	12,096	16,151	62,398	660	NA
1977	37,049	12,784	19,700	63,684	769	NA
1978	38,100	13,200	21,700	65,200	838	NA
Private farms						
1973	24,676	14,692	13,309	27,740	4,527	NA
1974	24,615	14,486	13,558	27,412	4,723	NA
1975	24,509	14,232	13,651	27,277	4,721	NA
1976	23,465	13,740	12,227	24,998	4,415	355
1977	22,813	13,388	11,768	24,495	4,286	328
1978	23,252	13,379	14,803	25,121	4,323	NA

NA = Not available.

Table 26--Livestock slaughter on collective and state farms and on private holdings, USSR, 1972-77

Economic holding and year	Cattle			Hogs			Sheep and goats		
	Number slaughtered	Live weight	Average weight	Number slaughtered	Live weight	Average weight	Number slaughtered	Live weight	Average weight
	Thousands	metric tons	Kilograms	Thousands	metric tons	Kilograms	Thousands	metric tons	Kilograms
		1,000			1,000			1,000	
Collective and state farms:									
1972	24,741	7,119	288	43,238	3,699	86	35,445	1,036	29
1973	25,630	7,400	300	40,737	3,432	84	35,448	1,084	31
1974	26,744	8,362	313	42,969	4,093	95	39,541	1,193	30
1975	NA	NA	NA	NA	NA	NA	NA	NA	NA
1976	29,218	8,959	307	37,007	3,145	85	34,338	1,060	31
1977	28,436	9,314	327	40,602	3,769	93	36,066	1,138	32
Total socialized farms: 1/									
1972	25,781	7,652	297	46,091	4,385	95	36,146	1,075	30
1973	26,326	7,858	298	43,402	4,124	95	36,080	1,127	31
1974	27,466	8,633	314	45,680	4,537	99	40,199	1,217	30
1975	27,915	8,674	311	54,707	4,852	89	42,657	1,252	29
1976	29,508	8,841	300	38,816	3,471	89	34,619	1,072	31
1977	28,725	9,432	328	42,314	4,112	97	36,447	1,153	32
Private holdings:									
1972	8,757	2,054	235	21,843	2,773	127	23,100	858	37
1973	8,612	2,053	238	20,026	2,524	126	22,808	869	38
1974	8,494	2,187	258	21,181	2,700	127	21,769	828	38
1975	8,682	NA	NA	21,603	NA	NA	23,641	NA	NA
1976	8,683	2,321	267	18,837	2,314	123	20,518	804	39
1977	7,708	1,987	257	19,845	2,472	124	18,924	744	39
Total:									
1972	34,538	9,706	281	67,934	7,158	105	59,246	1,933	33
1973	34,938	9,911	284	63,428	6,648	105	58,888	1,996	34
1974	35,960	10,720	307	66,861	7,237	108	61,968	2,045	33
1975	36,597	NA	NA	76,310	NA	NA	66,298	NA	NA
1976	38,191	11,162	292	57,653	5,785	100	55,137	1,876	34
1977	36,433	11,419	313	62,159	6,584	106	55,371	1,897	34

NA = Not available.

1/ Includes collective and state farms and other Government farms.

Table 27--Government procurements of grain, USSR, 5-year averages, 1961-75, and annual, 1966-77

Year	Wheat	Rye	Feed grains				Millet	Buckwheat	Rice	Pulses	Others	Total grain
			Barley	Oats	Corn	Total						
1,000 metric tons												
Average, 1961-65	30,253	5,845	6,355	674	4,121	11,150	1,155	242	207	2,151	634	51,637
1966	56,848	4,734	6,991	637	1,529	9,157	1,601	379	440	1,507	318	74,984
1967	38,165	4,182	6,909	1,473	1,995	10,377	1,613	559	579	1,322	437	57,234
1968	48,965	5,535	7,727	977	970	9,674	1,291	700	714	1,798	370	69,047
1969	36,127	3,332	7,272	1,341	2,470	11,083	1,512	639	759	1,679	409	55,540
1970	51,046	5,399	9,130	1,411	1,724	12,265	972	482	869	1,514	737	73,284
Average	46,230	4,636	7,606	1,168	1,738	10,512	1,398	552	672	1,564	454	66,018
1971	47,338	4,809	5,188	1,340	1,689	8,217	898	551	1,048	1,002	256	64,119
1972	42,106	2,978	7,042	1,710	2,013	10,765	1,016	365	1,218	862	661	59,971
1973	57,995	3,188	17,811	2,363	2,909	23,083	2,637	666	1,235	1,424	301	90,529
1974	38,268	6,618	15,895	2,348	3,021	21,264	1,530	440	1,337	1,481	2,347	73,285
1975	29,522	2,865	9,434	2,175	2,366	13,975	460	156	1,456	607	1,172	50,213
Average	43,046	4,092	11,074	1,987	2,400	15,461	1,308	436	1,259	1,075	947	67,624
1976	49,309	5,078	24,338	2,893	2,539	29,770	1,764	421	1,412	1,619	2,754	92,127
1977	42,211	2,156	13,329	2,791	2,272	18,392	902	460	1,547	1,034	1,325	68,027
1978												
1979												
1980												
Average												

Table 29--Government procurements of livestock products, USSR,
5-year averages, 1961-75, and annual, 1971-78

Year	:	Total meat <u>1/</u>		:	Milk	:	:	:
	:	Live	Carcass	:	and	:	Eggs	:
	:	weight	weight	:	milk	:		:
	:			:	products	:		:
	:	- - - - - <u>1,000 tons</u> - - - - -		:		:	<u>Millions</u>	<u>1,000 tons</u>
1961-65 average	:	8,554	5,246	:	31,232	:	8,665	369
1966-70 average	:	11,610	7,318	:	43,197	:	14,404	412
1971	:	14,163	9,203	:	47,078	:	21,570	457
1972	:	15,023	9,712	:	48,443	:	24,299	452
1973	:	14,695	9,471	:	52,978	:	27,544	470
1974	:	16,187	10,474	:	55,768	:	30,892	507
1975	:	16,765	10,861	:	56,296	:	33,065	511
1971-75 average	:	15,367	9,944	:	52,113	:	27,474	479
1976	:	15,108	9,314	:	56,220	:	32,897	481
1977	:	16,286	10,301	:	60,762	:	36,831	512
1978 <u>3/</u>	:	17,042	10,700	:	60,400	:	39,300	NA
1979	:			:		:		
1980	:			:		:		
1976-80 average	:			:		:		
1981	:			:		:		
1982	:			:		:		
1983	:			:		:		
1984	:			:		:		
1985	:			:		:		
1981-85 average	:			:		:		

NA = Not available.

1/ Livestock and poultry.

2/ Accounting weight.

3/ Preliminary.

Table 30---Per capita consumption of selected food products, USSR, 5-year averages, 1966-75, and annual, 1950, 1960, and 1970-77

Year	Meat and fat	Fish and fish products	Milk and milk products	Eggs	Sugar	Vegetable: oil	Potatoes	Grain 2/	Vegetables: and melons	Fruits and berries
	Kilograms		No. of eggs		Kilograms					
Consumption norm	82	18.6	405	292	40.0	9.1	97	110	146	113
1950	26	7.0	172	60	11.6	2.7	241	172	51	11
1960	40	9.9	240	118	28.0	5.3	143	164	70	22
1970	48	15.4	307	159	38.8	6.8	130	149	82	35
1966-70 average	47	14.3	287	144	37.2	6.5	132	150	78	NA
1971	50	14.8	300	174	39.5	7.0	128	147	85	39
1972	52	15.1	296	185	38.8	7.0	121	145	80	36
1973	53	16.1	307	195	40.8	7.3	122	143	85	41
1974	55	16.5	316	205	41.0	7.9	121	142	87	37
1975	57	16.8	315	216	40.9	7.6	120	141	89	39
1971-75 average	53	15.9	307	195	40.2	7.4	122	144	85	38
1976	56	18.4	316	209	41.9	7.7	119	141	86	39
1977	57	17.7	322	224	42.0	7.9	122	140	89	41
1978										
1979										
1980 plan	63	20.9	335	225	50.0	NA	115	144	113	44
1976-80 average										
1981										
1982										
1983										
1984										
1985										
1981-85 average										

Note: Consumption norm is the level of consumption recommended by the Institute of Nutrition, Academy of Sciences, USSR.
NA = Not available.

1/ Including milk equivalent of butter.

2/ Flour equivalent.

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